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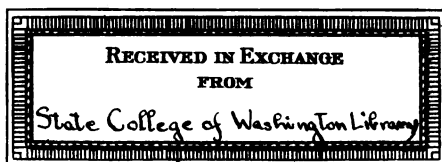
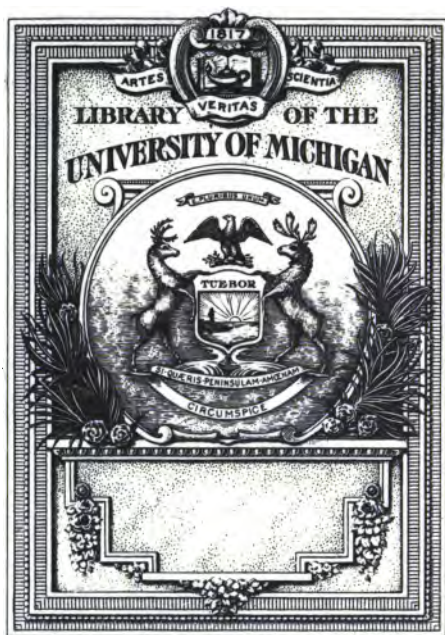
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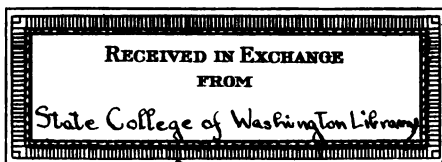
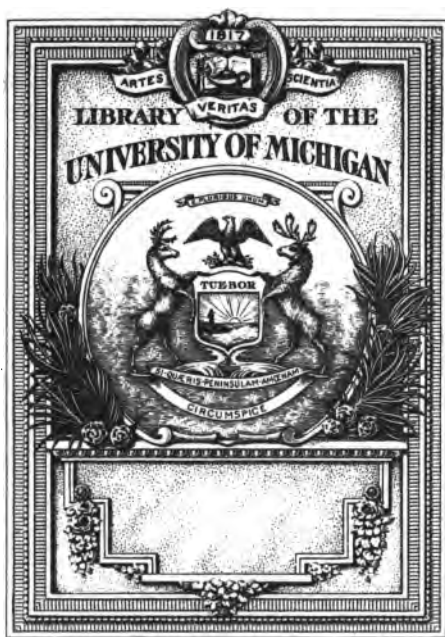
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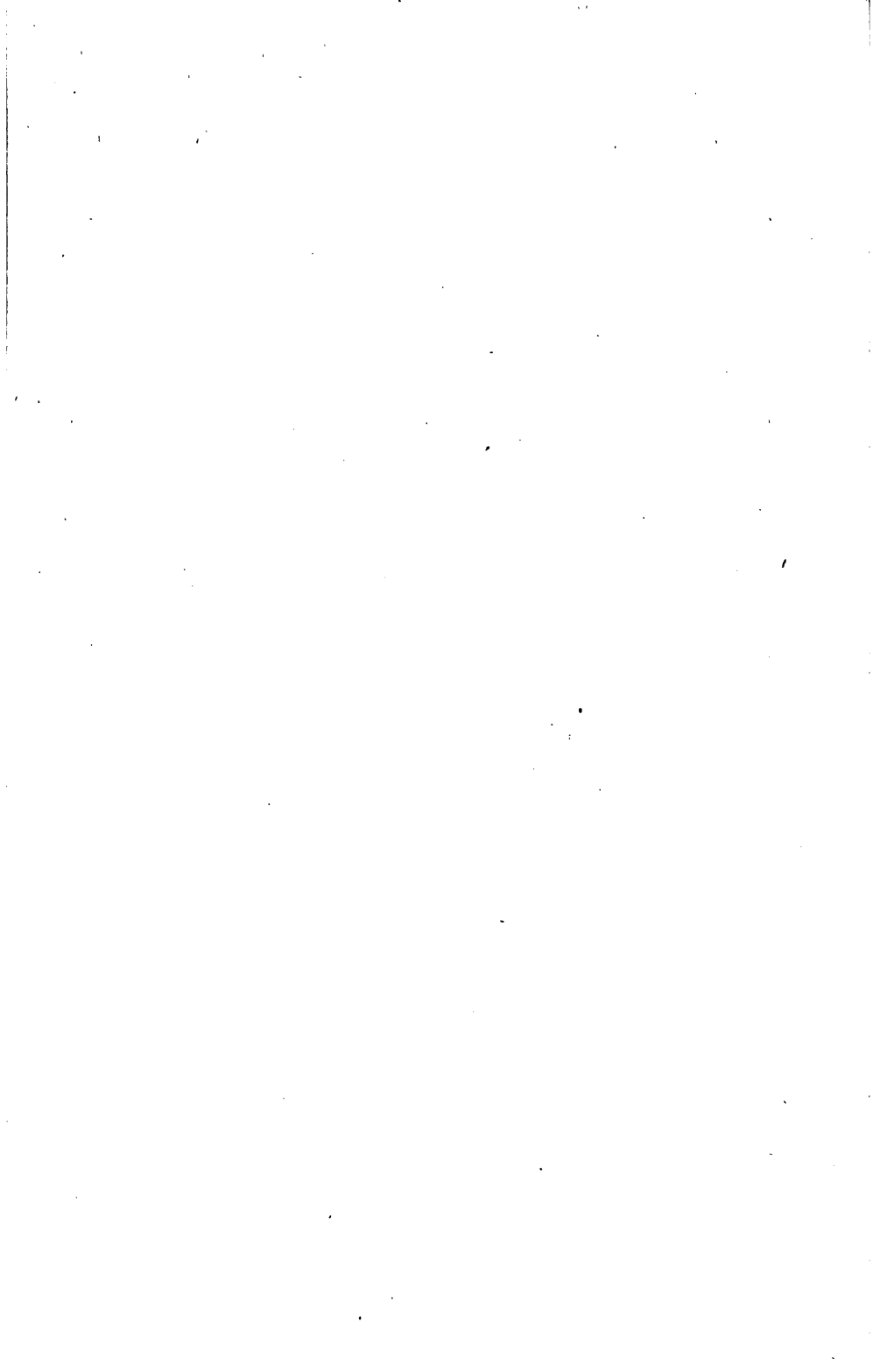
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ANNUAL REPORT

OF THE

ILLINOIS FARMERS' INSTITUTE

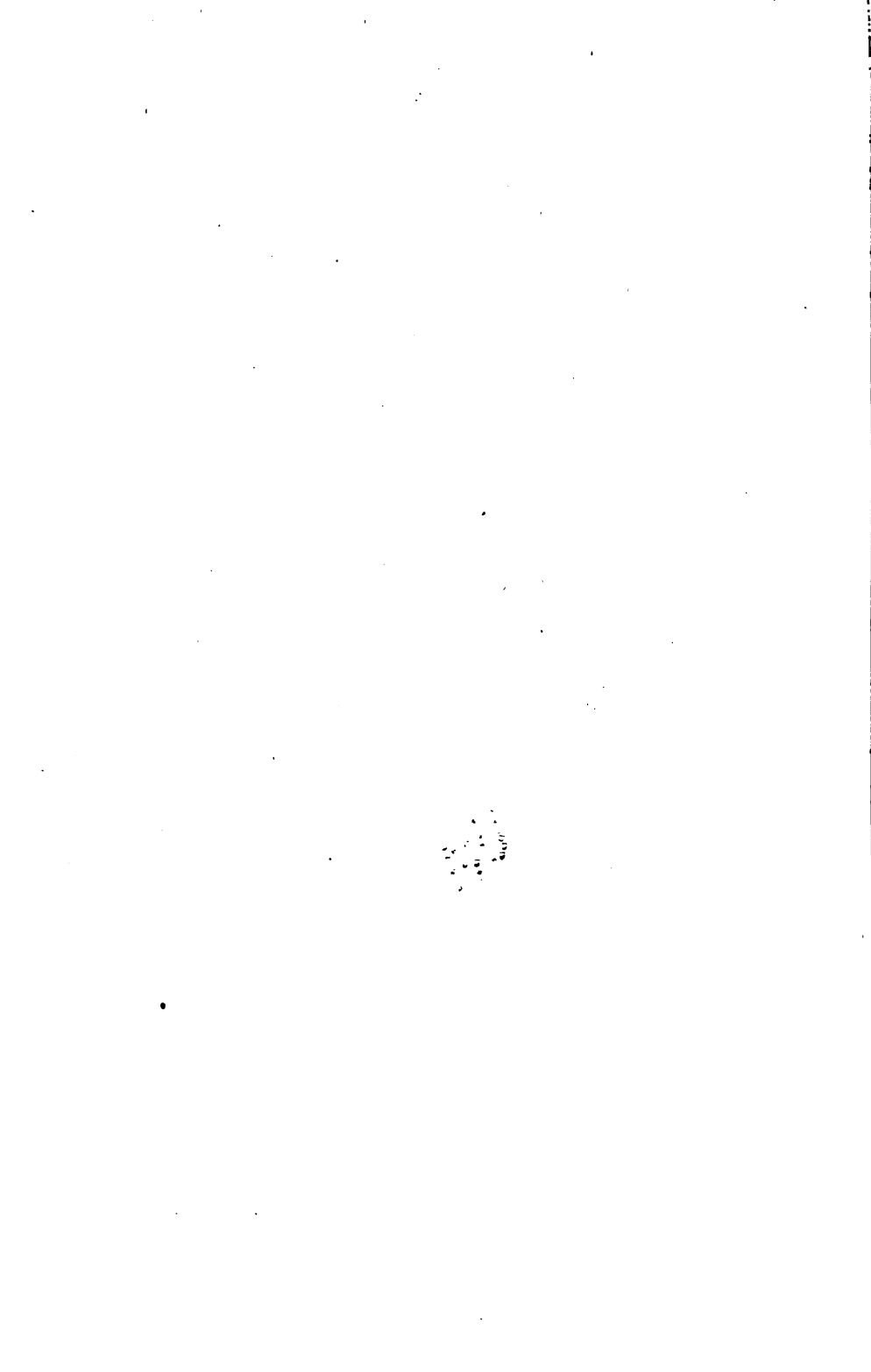
WITH REPORTS OF

COUNTY FARMERS' INSTITUTES



FOR THE YEAR 1901.

SPRINGFIELD, ILL.
PHILLIPS BROS., STATE PRINTERS.
1901.



LETTER OF TRANSMITTAL.

To His Excellency, RICHARD YATES, Governor of Illinois.

SIR:—I have the honor to transmit the report of the Illinois Farmers' Institute for 1900, and trust an inspection of its contents will satisfy you that the funds appropriated by the General Assembly for the advancement of useful education among the farmers, and for developing the agricultural resources of the State, have been wisely expended.

Respectfully submitted,

A. B. HOSTETTER,

Secretary.

OFFICERS OF THE ILLINOIS FARMERS' INSTITUTE.



G. A. WILLMARTH, President,
SENECA, ILL.



L. N. BEAL, Vice President,
MT. VERNON, ILL.



A. B. HOSTETTER, Secretary,
SPRINGFIELD, ILL.



A. P. GROUT, Treasurer,
WINCHESTER, ILL.

[CREATED BY ACT OF THE 39TH GENERAL ASSEMBLY.]

Officers March 1, 1900, to March 1, 1901.

President—G. A. Willmarth..... Seneca
Vice-President—L. N. Beal..... Mt. Vernon
Treasurer—A. P. Grout..... Winchester
Secretary and Superintendent of Institutes—A. B. Hostetter..... Springfield

BOARD OF DIRECTORS.

Ex-Officio.

State Superintendent of Public Instruction—Alfred Bayliss..... Springfield
President State Dairymen's Association—Geo. H. Gurler..... DeKalb
Dean of College of Agriculture—Eugene Davenport..... Urbana
President State Board of Agriculture—W. H. Fulkerson..... Jerseyville
President State Horticultural Society—Henry M. Dunlap..... Savoy

ELECTIVE BY CONGRESSIONAL DISTRICTS.

1st	District—	*Chas. H. Dolton.....	Dolton
2d		W. R. Goodwin.....	1108-358 Dearborn st., Chicago
3d		Sara Steenberg.....	145 LaSalle st., Chicago
4th		John M. Clark.....	960 Warren ave., Chicago
5th		James Frake.....	132 LaSalle st., Chicago
6th		Wm. Stewart.....	623 Dearborn ave., Chicago
7th		H. D. Hughes.....	Antioch, Lake County
8th		C. D. Bartlett.....	Bartlett
9th		Amos F. Moore.....	Pole
10th		J. H. Coolidge.....	Galesburg
11th		G. A. Willmarth.....	Seneca
12th		F. I. Mann.....	Gilman
13th		S. Noble King.....	Box 295, Bloomington
14th		Oliver Wilson.....	Magnolia
15th		G. W. Dean.....	Adams
16th		A. P. Grout.....	Winchester
17th		Charles F. Mills.....	Springfield
18th		F. W. Burroughs.....	Edwardsville
19th		D. H. Shank.....	Paris
20th		L. N. Neal.....	Mt. Vernon
21st		W. R. Kimzey.....	Tamaroa
22d		H. G. Easterly.....	Carbondale

STANDING COMMITTEES.

Executive Committee.

G. A. Willmarth, L. N. Beal, Walter R. Kimzey,
S. Noble King, D. H. Shank.

State Institute Meeting Committee.

Oliver Wilson, Eugene Davenport, Geo. H. Gurler,
E. W. Burroughs, G. A. Willmarth.

Committee to Select Speakers for County Institutes.

J. H. Coolidge, H. G. Easterly, Henry M. Dunlap,
Geo. H. Gurler, G. A. Willmarth.

Legislative Committee.

A. P. Grout, J. H. Coolidge, G. W. Dean,
Henry M. Dunlap, G. A. Willmarth.

Auditing Committee.

E. W. Burroughs, H. G. Easterly, F. I. Mann,
C. D. Bartlett, G. A. Willmarth.

Organizing Township Institutes.

Chas. F. Mills, F. I. Mann, H. D. Hughes,
John M. Clark, G. A. Willmarth.

Special Features for Improving County Institutes.

Amos F. Moore, C. D. Bartlett, W. H. Fulkerson,
Wm. Stewart, G. A. Willmarth.

Committee on Domestic Science Association.

Mrs. Sara Steenberg, G. W. Dean, Oliver Wilson,
H. D. Hughes, G. A. Willmarth.

Agricultural Education and Library Committee.

Alfred Bayliss, Eugene Davenport, W. H. Fulkerson,
James Frake, G. A. Willmarth.

ILLINOIS FARMER'S INSTITUTE.

[CREATED BY ACT OF THE 39TH GENERAL ASSEMBLY.]

Officers February 26, 1901, to March 1, 1902.

President—Walter R. Kimzey.....	Tamaroa
Vice-President—S. Noble King.....	Bloomington
Treasurer—A. P. Grout.....	Winchester
Secretary and Superintendent—A. B. Hostetter.....	Springfield

BOARD OF DIRECTORS.

Ex-Officio.

Superintendent of Public Instruction—Alfred Bayliss.....	Springfield
Dean of the College of Agriculture—Eugene Davenport.....	Urbana
President State Board of Agriculture—Martin Conrad.....	Sherman House, Chicago
President State Horticultural Society—Henry M. Dunlap.....	Savoy
President State Dairyman's Association—Joseph Newman.....	Elgin

ELECTIVE BY CONGRESSIONAL DISTRICTS.

1st District—*	
2d	W. R. Goodwin.....1108-358 Dearborn st., Chicago
3d	Mrs. Sarah Steenberg.....145 LaSalle st., Chicago
4th	J. M. Clark.....960 Warren ave., Chicago
5th	Jas. Frake.....132 LaSalle st., Chicago
6th	Wm. Stewart.....623 Dearborn ave., Chicago
7th	H. D. Hughes.....Antioch
8th	George A. Hunt.....Greenwood
9th	Amos F. Moore.....Polo
10th	J. H. Coolidge.....Galesburg
11th	A. W. Bryant.....Princeton
12th	F. I. Mann.....Gilman
13th	S. Noble King.....Bloomington
14th	Ralph Allen.....Delevan
15th	G. W. Dean.....Quincy R. D. No. 1
16th	A. P. Grout.....Winchester
17th	Charles F. Mills.....Springfield
18th	E. W. Burroughs.....Edwardsville
19th	D. H. Shank.....Paris
20th	L. N. Beal.....Mt. Vernon
21st	W. R. Kimzey.....Tamaroa
22d	H. G. Easterly.....Carbondale

STANDING COMMITTEES.

Executive Committee.

W. R. Kimzey.	L. N. Beal,	D. H. Shank,
James Frake,	S. Noble King.	

State Institute Meeting Committee.

W. R. Kimzey,	Henry M. Dunlap,	W. R. Goodwin.
H. G. Easterly,	Chas. F. Mills.	

Committee to Select Speakers for County Institutes.

J. H. Coolidge,	A. W. Bryant,	Joseph Newman,
A. P. Grout,	W. R. Kimzey.	

Legislative Committee.

Amos F. Moore,	G. W. Dean,	Henry M. Dunlap,
E. W. Burroughs,	W. R. Kimzey.	

Auditing Committee.

E. W. Burroughs,	H. G. Easterly,	H. D. Hughes,
George A. Hunt,	W. R. Kimzey.	

Organization of Farmers Clubs Committee.

Chas. F. Mills,	J. M. Clark,	Ralph Allen,
H. D. Hughes,	W. R. Kimzey.	

Special Features for Improving County Institutes.

F. I. Mann,	Geo. A. Hunt,	Eugene Davenport,
Martin Conrad,	W. R. Kimzey.	

Domestic Science Committee.

Mrs. Sara Steenberg,	J. H. Coolidge,	J. M. Clark,
Amos F. Moore,	W. R. Kimzey.	

Agricultural Education and Library Committee.

Alfred Bayliss,	Eugene Davenport,	Ralph Allen,
F. I. Mann,	W. R. Kimzey.	

Soil Investigations and Experiments.

W. R. Kimzey,	H. G. Easterly,	Ralph Allen.
E. W. Burroughs,	H. D. Hughes.	

Member of the Advisory Board of the Illinois Experiment Station.

S. Noble King.

AN ACT CREATING THE ILLINOIS FARMERS' INSTITUTE.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That to assist and encourage useful education among the farmers, and for developing the agricultural resources of the State, that an organization under the name and style of "Illinois Farmers' Institute" is hereby created and declared a public corporation of the State.

§ 2. It shall consist of three delegates from each county of the State, elected annually at the Farmers' Institutes for said county by the members thereof.

§ 3. The affairs of the Illinois Farmers' Institute shall be managed by a board of directors, consisting of

1. State Superintendent of Public Instruction.
2. Professor of Agriculture of the University of Illinois.
3. President of the State Board of Agriculture.
4. President of the State Horticultural Society.

5. President of the State Dairyman's Association, and one member from each congressional district of the State, to be selected by the delegates from the district present at the annual meeting of this organization: *Provided*, That the members first selected from the congressional districts of even number shall serve for one year, and the members first selected from the congressional districts of odd numbers shall serve for two years, and that the members selected thereafter to fill expired terms of office shall serve for the period of two years.

§ 4. The board of directors of the Illinois Farmers' Institute shall have sole care and disposal of all funds that may be appropriated by the State to sustain the organization, and shall expend the same in such manner as in their judgment will best promote the interest in useful education among the farmers and develop the agricultural resources of the State. The Illinois Farmers' Institute shall make annual report to the Governor of its transactions, which report shall include papers pertaining to its work and addresses made at the annual meeting of the organization, and a classified statement of all moneys received and of all expenditures made, and twenty thousand (20,000) copies of said report shall be printed on or before September 1 of each fiscal year, one-half for the use of the Illinois Farmers'

Institute, and the remainder to the Secretary of State for distribution. It shall make no appropriation without funds in hand to meet same, and the State of Illinois shall in no event be held liable or responsible for debt, obligation or contract made by the Illinois Farmers' Institute or its board of directors.

§ 5. There shall be held annually, under the direction of the board of directors, between October 1 and March 1 following of each year, a public meeting of the delegates from county farmers' institutes and of farmers of this State, at such time and place as may be determined by the board of directors, of not less than three (3) days duration, which meeting shall be held for the purpose of developing the greater interest in the cultivation of crops, in the care and breeding of domestic animals, in dairy husbandry, in horticulture, in farm drainage, in improved highway and general farm management, through and by means of liberal discussions of these and kindred subjects, and any citizen may take part in these meetings, but only duly elected and accredited delegates from county farmers' institutes shall be permitted to vote in the election of the board of directors.

§ 6. The members of each new board of directors shall enter upon their duties the next Tuesday after their election, and hold their offices for one or two years, as provided in section 3, or until their successors are elected and enter upon their duties. It shall have power to fill vacancies in the board. It shall organize by the election of a president, vice-president, secretary, treasurer and State superintendent of farmers' institutes, and such other officers or agents as may be deemed proper for organizing and conducting the work of the organization, who shall hold their offices for one (1) year, unless removed sooner by the board, and shall perform such duties as may be required of them by rules of the board. The secretary, treasurer and superintendent may be others than members of the board.

§ 7. Rooms in the capitol building shall be assigned to the officers of this organization by the proper authority, which shall then be under the control of the board of directors.

§ 8. The board of directors may make and enforce such rules and by-laws not in conflict with the laws of this State, as will render its work most useful and efficient.

§ 9. For the purpose mentioned in the preceding sections, said board of directors may use such sum as it may deem proper and necessary, not exceeding the amount appropriated therefor by the General Assembly from the general fund for that purpose: *Provided, further,* that the

1. State Superintendent of Public Instruction,
2. Professor of Agriculture of the University of Illinois,
3. President of the State Board of Agriculture,
4. President of the State Horticultural Society,
5. President of the State Dairymen's Association,

And the present congressional representatives of the Illinois Farmers' Institute Association shall constitute the first board of directors

of this organization, who shall have charge of the affairs of the same until their successors have been duly elected, and enter upon their duties as provided in this act.

As amended and approved May 11, 1901.

An act making appropriation for the Illinois Farmers' Institute and county farmers' institutes:

WHEREAS, To assist and encourage useful education among farmers and for developing the agricultural resources of the State, the Thirty-ninth General Assembly created an organization under the name and style of the Illinois Farmers' Institute, and intrusted to it the development of greater interest in the cultivation of crops, in the breeding and care of domestic animals, in dairy husbandry, in horticulture, in farm drainage, in improvement of highways and general farm management, through and by means of liberal discussions of these and kindred subjects, and for improving the condition of the farmer by affording a better knowledge of successful agriculture; therefore, to sustain the same,

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That there be, and is hereby, appropriated to the Illinois Farmers' Institute the following sums, to-wit:

§ 2. For expressage, postage, office expenses, furniture, etc., the sum of one thousand three hundred dollars (\$1,300) per annum for the fiscal years, beginning July 1, 1901 and 1902.

§ 3. For the expenses of collecting matter and preparing manuscript, editing the annual report and bulletins, stenographer, clerk hire, etc., the sum of one thousand seven hundred dollars (\$1,700) per annum for the fiscal years beginning July 1, 1901 and 1902.

§ 4. For the purchase of books for, and the maintenance and management of the Illinois Farmers' Institute free libraries, the sum of two thousand five hundred dollars (\$2,500) per annum for the fiscal years beginning July 1, 1901 and 1902.

§ 5. For the actual expenses of district directors and of able and practical speakers to be furnished by the Illinois Farmers' Institute, to county farmers' institutes, for the purpose of assisting in making their meetings of more general interest and of greatest practical benefit, for the expense of organizing county institutes, for the expense of printing program, advertising of speakers and exhibit at the State institute, the sum of five thousand dollars (\$5,000) per annum for the fiscal years beginning July 1, 1901 and 1902: *Provided*, That county institutes, or their representatives, shall be permitted to select their own speakers and to have such topics for consideration as shall be of interest to their respective localities.

§ 6. For the use of each county farmers' institute, the sum of seventy-five dollars (\$75) per annum for the fiscal years beginning July 1, 1901 and 1902, to be paid to the treasurer of each county farmers' institute when such institute shall file with the secretary of the Illinois Farmers' Institute a sworn statement which shall show

that said county farmers' institute has held one or more duly advertised public sessions annually, of not less than two days each, at some easily accessible location, which shall include an itemized exhibit of the expenses of said meeting, with receipted vouchers therefor, a copy of its printed program, and the printed proceedings, showing title and author of the papers read and by whom discussed, place or places of meeting, with average daily attendance, and such other information as may be called for by the Illinois Farmers' Institute and necessary to successfully assist this work.

§ 7. No officer nor officers of any county farmers' institute shall be entitled to or receive any moneyed compensation whatever for any service rendered the same.

§ 8. That on the order of the president, countersigned by the secretary of the Illinois Farmers' Institute, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois Farmers' Institute for the sum herein appropriated: *Provided*, That each warrant on account of a county farmers' institute shall show the county institute for whose benefit the same is drawn: *Provided, further*, That the program and printed proceedings of the county farmers' institute for which each warrant is drawn shall show that some of the following topics have been presented and discussed, viz: Grain farming, stock feeding and breeding, dairy husbandry, orchard and small fruit culture, farmers' garden, domestic science and any other subjects pertaining to farm life: *Provided, further*, That if the necessary expense of a county farmers' institute shall not equal the sum of seventy-five dollars (\$75) as aforesaid, then said warrant shall only be drawn for the sum expended.

§ 9. It shall be the duty of the treasurer of the Illinois Farmers' Institute to pay over to the treasurer of each county farmers' institute the said sum of seventy-five dollars (\$75), or so much thereof as may be received for its use and benefit, as aforesaid, and make annual report to the Governor as provided by law.

Approved May 10, 1901.

SIXTH ANNUAL MEETING

OF THE

Illinois Farmers' Institute

HELD IN THE

ARMORY BUILDING AND OPERA HOUSE
JACKSONVILLE, ILLINOIS.

February 19, 20, 21, 22, 1901.



LOCAL ORGANIZATION FOR PROMOTING THE ILLINOIS FARMERS' INSTITUTE MEETING AT JACKSONVILLE, ILL.

COMMITTEES.

Executive Committee—Chas. S. Rannels, chairman; J. P. Lippincott, Chas. L. Degen, M. R. Fitch, W. H. Stevenson and A. C. Rice.

Finance—John A. Ayers, chairman; J. R. Robertson, Andrew Russel, Frank Elliott and F. E. Farrell.

General Arrangements—W. H. Stevenson, chairman; Charles A. Rowe and John B. Joy.

Press—G. E. Doying, chairman; J. H. Hackett and S. W. Nichols.

Reception—J. H. Hackett, chairman; Mayor S. A. Fairbank, Prof. F. H. Hall, W. L. Alexander, F. L. Sharpe, H. L. Doan, H. S. Stevenson, James I. Barrows, John R. Davis and John W. Daly.

Entertainment—F. L. Sharpe, chairman; J. T. King and Wm. Newman.

Music—Robert M. Hockenhull, chairman; Thomas H. Rapp and Dr. M. H. Goodrick.

Decoration—E. H. Ticknor, chairman; Harry Heintz and Frank L. Plouer.

Domestic Science—Mrs. T. J. Pitner, chairman; Mrs. John C. O'Neal, Mrs. Wm. K. McLaughlin, Mrs. John W. Leach, Miss Kathryn Robertson and Mrs. George Fox, of Chapin.

Those expecting to attend the annual meeting of the Illinois Farmers' Institute to be held in Jacksonville, Ill., Feb. 19, 20, 21 and 22, 1901, are requested to file application for accommodations with Mr. F. L. Sharpe, Jacksonville, Ill., chairman of the Entertainment Committee. Full information should be given as to the number in the party, how many beds and rooms will be needed, as well as preference for hotel.

The hotels and rates are as follows:

Dunlap House \$2.00 per day.

Pacific Hotel \$2.00 per day.

The Crescent \$1.25 single, \$1.00 double, per day.

Park Hotel \$1.00 per day.

New Southern \$1.00 per day.

Restaurants and boarding houses will not charge more than regular rates.

ANNOUNCEMENT.

The Board of Directors of the Illinois Farmers' Institute and the officers of the Illinois Association of Domestic Science extend a cordial invitation to the members of the several County Farmers' Institutes, to the farmers, horticulturists, dairymen, live stock breeders, and gardeners of Illinois, also to the members of the Domestic Science Associations and Women's Clubs, the housekeepers and home makers and all others who are interested in the development of the resources of the State and the upbuilding of our homes, to attend the sixth annual State meeting, to be held in Jacksonville, Morgan county, on February 19, 20, 21, 22, 1901.

The meetings are all free to the public and there will be an opportunity for the general discussion of all topics on the program.

The program covers a wide range of subjects which will be presented and discussed by those of recognized ability and experience in their respective lines of work.

The class exercises, which are free to all, and will be conducted each day in live stock, horticulture and domestic science by Professors Kennedy and Blair, and Mrs. Kedzie, will afford those interested in these lines ample opportunity to inquire into questions of special value to them.

The introduction of other subjects of general importance to agriculture may be introduced through the Question Box. The questions to be submitted to Oliver Wilson, chairman of committee on program.

The entertainment to be given on Friday evening by the students of the Institutions for the Education of the Blind and the Deaf and Dumb, will afford a rare opportunity to learn what can be accomplished in these grand institutions.

The term of office of the institute directors of the even numbered districts expires on the 1st day of March, 1901. The delegates in attendance at the annual meeting at Jacksonville from those districts will select directors for the ensuing two years. Under the law creating the Illinois Farmers' Institute "only duly accredited delegates from County Farmers' Institutes shall be permitted to vote in the election of the board of directors." The convention for the election of directors will be held Wednesday, February 20, 1901, at 4:30 p. m.

Jacksonville, Ill., where the annual meeting of the Illinois Farmers' Institute will be held this year, is the county seat of Morgan county, a thriving city of 15,078 inhabitants. It is easily accessible from any point in Illinois over the following railroads, which enter the city limits: J. & St. L. R. R., C. P. & St. L. Railway, C. & A. R. R., and Wabash R. R., all of which lines will give a rate of one and a third fare or better for the round trip during the institute meetings.

Jacksonville is situated in the midst of the great corn producing farms of the State, and is the greatest distributing point of stock cattle in Illinois, outside of Chicago and East St. Louis, and many cattle feeders live in the vicinity. Visitors at the institute will meet some of the most progressive farmers and cattle growers from this locality that can be found anywhere, and their experiences, as brought out in the discussions during the meetings, will be of great value to the younger farmers who may attend.

BUSINESS INTERESTS.

But few, if any, inland cities are more favorably situated for the growth of substantial business interests than is Jacksonville. The first railroad laid in the State of Illinois traversed this section of the country and Jacksonville was one of the main points upon it. There are now four railroads making admirable connections in this city and placing the business interests in rapid communication with all points far or near. The neighboring cities are located advantageously, while the country surrounding the city is one of the richest and most productive in the State. The advantages, uniting, as they have done, into one, have caused a marked degree of prosperity to attend business enterprises in this city. Within the past two years several large business blocks have been erected and but few empty store rooms can be found. The merchants and business men are progressive, enterprising, public spirited and liberal. The Business Men's Association is an incorporated organization, which meets on the last Friday of each month and discusses matters of importance to the business life of the city. This association has always been active for the good of the city, and it was due to the enterprise its members manifested that many meetings of value to the city and the State have been held in Jacksonville.

There is one manufacturing firm in Jacksonville that is unique. There is nothing like it in the country, perhaps not in the world. It is possible for a farmer to take his wool to a certain manufacturing establishment in this city and have it returned to him in the form of an elegant, stylish and substantial suit of clothes. This manufactory was founded in 1839 by Joseph Capps and is now carried on by his descendants under the style of J. Capps & Sons, limited.

The power first used was a small steam engine made by Mr. Capps himself. Now a 300 horse power engine is required to drive the vast amount of machinery used. It takes about 500 people to run this establishment when in full blast and it runs the year round. Their sales are about one million dollars. Most of their cassimeres and worsteds are now sold when made up into men's clothing.

Visitors will be cordially received during institute week and politely shown through the various departments.

The Chicago, Peoria & St. Louis Railway is a Jacksonville institution.

Some years since W. S. Hook, Esq., now president of the Los Angeles Traction Company, was president of the system of railroads known as the Jacksonville Southeastern Line, with headquarters in this city. They were sadly in need of some suitable place to do their repairing. The citizens took the matter up and the result is one of the very best plants for manufacturing and repairing of engines and cars in Central Illinois, costing between \$100,000 and \$200,000, of which the citizens paid \$55,000 in cold cash.

These shops employ about 300 men, and the pay roll is \$20,000 per month, and are in charge of W. E. Killen, superintendent of Motive Power and Equipment.

EDUCATIONAL INTERESTS.

The educational interests of the city of Jacksonville have always been paramount. A large and commodious school building is located in each ward, and in the first and third wards there are branch schools. A member of the board of education is elected by the people from each ward, and the mayor of the city is *ex-officio* president of the board. Meetings are held on the first Monday of each month throughout the year, and at such other times as the board is called together by the president. The city superintendent and the teachers are named annually by the board of education. In the first ward, including the branch, there are 13 teachers; in the second, 13; in the third, 14; in the fourth, 11. There are also a music teacher for the city schools, a teacher of drawing and a truant officer. The high school is located on West State street. There are seven teachers and thorough courses of instruction are given in science, Latin, mathematics and English.

The excellent system of public schools, with the number of colleges located here, have made Jacksonville an educational center, and it is known as such throughout the West. Illinois College properly claims the distinction of being the first chartered educational institution in the State. The Woman's College and the Academy for Young Women are flourishing institutions, each with an excellent corps of teachers. The College of Music is the musical department of the Woman's College and it has always enjoyed highly merited success. The Conservatory of Music is well-known throughout the State, and is under the management of the authorities of the Academy for Young Women. These institutions, with the Jacksonville Business college, bring annually hundreds of young men and young ladies to the city, and form the nucleus around which centers the literary culture and refinement for which Jacksonville is so well-known. There are also a large number of literary clubs, which hold regular meetings and at which all subjects of general and literary interest are discussed. Prominent among these may be mentioned:

The Club, the Literary Union, The Round Table, Sorosis, Monday Conversation, Plato Club and The Parthenian club, with a number of others.

Jacksonville has always held a conspicuous place among the cities of Illinois. The School for the Education of the Blind, The School for the Education of Deaf and Dumb and the Central Hospital for the Insane are located here. Many of her citizens have been in times past and many others are now men of influence in National and State affairs. Such names as General Hardin, Governor Duncan, Governor Yates and Dr. J. B. Turner have added to Jacksonville's fame.

In addition to the public school system, the educational advantages of the city are enhanced by the parochial school, located at the corner of Fulton and Court streets. It is in charge of the Dominican sisters and courses are given in the common branches. A large number of children receive instruction in this institution and entertainments, which speak well for the work of the school, are frequently given in Liberty hall.

The Jacksonville public library is located at 221 South Main street. The directors are appointed by the mayor and confirmed by the city council. The shelves are filled with the best of books in all departments of literature and the tables are supplied with metropolitan daily newspapers and the leading magazines of science and fiction.

Jacksonville is proud of the fact that the home of the present Governor of Illinois has always been in Jacksonville. It is also to the credit of the city that three of the greatest institutions of the State are located here, namely: Hospital for the Insane, Institution for the Education of the Blind and Institution for the Education of the Deaf and Dumb.

The citizens of Jacksonville unite with the Illinois Farmers' Institute and Domestic Science Association in extending a hearty invitation to the people of the State to attend the annual meeting and will do all in their power to make the visit pleasant and profitable to all visitors.

ILLINOIS FARMERS' INSTITUTE.

CONVENTION OF DELEGATES.

ARMORY HALL, JACKSONVILLE, ILLINOIS.

TUESDAY, FEBRUARY 19, 1901.

MORNING SESSION—10 O'CLOCK.

G. A. WILMARTH, *Presiding.*

President Illinois Farmers' Institute.

Music—"America"—By the Audience.

Prayer—George L. Snively, Pastor Christian church, Jacksonville.

Appointment of Committees.

Enrollment of Delegates and Presentation of Credentials.

Reports of the condition of the several County Farmers' Institutes by delegates.

A general discussion of the ways and means of increasing the usefulness of County Farmers' Institutes, in which all are invited to take part.

It is requested that reports be submitted in writing, that all delegates may have time to report.

Question Box will be in charge of Oliver Wilson, chairman of committee on program. All questions should be submitted to him.

AFTERNOON SESSION—1:30 P. M.

Music.

Address of Welcome—Gov. Richard Yates.

Response—Oliver Wilson, Director 14th District.

Report of Superintendent of Institutes—A. B. Hostetter, Springfield.

Address on Live Stock (Introductory of the class work during the week)—W. J. Kennedy, Instructor Animal Husbandry, College of Agriculture, University of Illinois.

Address on Horticulture (Introductory of the class work during the week)—J. C. Blair, Assistant Professor of Horticulture, College of Agriculture, University of Illinois, and Horticulturalist of the Experiment Station.

EVENING SESSION—7:30 O'CLOCK.

Music.

Address, "To What Extent Should Agriculture be Taught in the Common Schools?"—Dr. Frank Hall, Superintendent of the Blind, Jacksonville, Ill.

Music.

Address, "The Value of the Trained Hand"—Mrs. Nellie Kedzie, Instructor of Domestic Science, Bradley Institute, Peoria, Ill.

Music.

WEDNESDAY, FEBRUARY 20, 1901.

MORNING SESSION—9:00 O'CLOCK.

Class in Live Stock from 9 to 9:30—W. J. Kennedy, Instructor.

Class in Horticulture from 9 to 9:30—J. C. Blair, Instructor.

Class in Domestic Science from 9 to 9:30—Mrs. Nellie Kedzie, Instructor.

GENERAL SESSION—9:30.

Music.

Prayer—Rev. J. W. Crowe, Jacksonville, Rector Church of Our Savior.

Corn; Its Place in Illinois Agriculture—E. E. Chester, Champaign, President of the Illinois Corn Growers' Association.

Insects Injurious to Corn—Prof. S. A. Forbes, Urbana, State Entomologist.

The Elements of Fertility Taken from the Soil by a Crop of Corn and How to Restore Them—E. G. Hopkins, Professor of Agronomy and Chemist of the Experiment Station, University of Illinois.

General discussion of questions pertaining to corn growing.

AFTERNOON SESSION—1:30 O'CLOCK.

Music.

Annual Address of the President of the Illinois Farmers' Institute—G. A. Willmarth, Seneca.

Music.

Address, "What the Department of Agriculture is Doing for the Farmer"—Hon. James Wilson, Secretary of Agriculture, Washington, D. C.

CONVENTION OF DELEGATES
ILLINOIS FARMERS' INSTITUTE.

WEDNESDAY AFTERNOON, FEB. 20, 1901.

IN OPERA HOUSE, JACKSONVILLE, ILLINOIS—4:30 O'CLOCK.

The delegates from the several County Farmers' Institutes will meet to elect directors for the even numbered Congressional Districts. Only the duly accredited delegates present will be allowed to vote. Voting by proxy not admissible.

EVENING SESSION—7:30 O'CLOCK.

The members of the General Assembly will be invited to attend this session, and it is expected that the majority of them will be present.

Music.

Address—The late Hon. James A. Mount, Indianapolis, Ex-Governor of Indiana, was to have filled this place. The vacancy will be supplied.

Music.

Address—Hon. James Wilson, Secretary of Agriculture, Washington, D. C.

Music.

Short Speeches by Farmers, members of the 42d General Assembly.

THURSDAY MORNING, FEB. 21, 1901—OPERA HOUSE—9 O'CLOCK.

Class in Live Stock, 9 to 9:30—W. J. Kennedy, Instructor.

Class in Horticulture, 9 to 9:30—J. C. Blair, Instructor.

Class in Domestic Science, 9 to 9:30—Mrs. Nellie S. Kedzie, Instructor.

GENERAL SESSION.

Music.

Prayer—Rev. A. L. T. Ewert, Jacksonville, Pastor Centenary M. E. Church.

Address—"The Influence of Good Roads Upon Farm Life and Farm Property"—Howard H. Gross, Chicago, Special Agent and Expert Office Public Road Inquiry, U. S. Dept. of Agriculture.

Address—"Coöperation Among Farmers"—Hon. Aaron Jones, Master of the National Grange, South Bend, Ind.

ANNUAL MEETING
ILLINOIS ASSOCIATION DOMESTIC SCIENCE.

BUSINESS SESSION.

THURSDAY MORNING, FEBRUARY 21, 1901.

PARLORS PACIFIC HOTEL—9 O'CLOCK.

Reports of officers.
Reports of delegates.
Miscellaneous business.
Election of officers.

AFTERNOON SESSION—1:30 O'CLOCK.

Program under the direction of the Illinois Association of Domestic Science.

MRS. SARA STEENBERG, (Chicago), *Presiding Officer*.

Chairman of Illinois Farmers' Institute Committee on Domestic Science.

Welcome and Address, "The University"—Mrs. Mary Turner Carriel, Jacksonville, Member of the Board of Trustees, University of Illinois.

Secretary's Report of the Year—Mrs. Sada VanHorn Blair, Urbana, Secretary Illinois Association of Domestic Science.

Domestic Science at a State University—Miss Isabel Bevier, Urbana, Professor Household Science at the University of Illinois.

Farm House Architecture—James M. White, Champaign, Associate Professor of Architecture, University of Illinois.

Music.

The Evolution of the Kitchen—Mrs. Elizabeth O. Hiller, Chicago, Principal Chicago Domestic Science Training School.

EVENING SESSION—7:30 O'CLOCK.

Music.

Address, "Life in Paris"—Mrs. Henry M. Dunlap, Savoy, Vice-President Illinois Association of Domestic Science.

Music.

Some Inequalities in School Administration—Alfred Bayliss, Springfield, Superintendent Public Instruction.

Music.

FRIDAY, FEBRUARY 22, 1901.

MORNING SESSION—9:00 O'CLOCK.

Class in Live Stock, 9 to 9:30—W. J. Kennedy, Instructor.

Class in Horticulture, 9 to 9:30—J. C. Blair, Instructor.

Class in Domestic Science, 9 to 9:30—Mrs. Nellie S. Kedzie, Instructor.

GENERAL SESSION.

Music.

Prayer—Rev. E. Morey, Jacksonville, Pastor State Street Presbyterian Church.

The Value of a Crop of Sugar Beets as Compared with Other Staple Farm Crops, and Its Effect Upon the Soil—P. G. Holden, Pekin.

Report of the Committee on Resolutions.

Opening of the question box and general discussion of the topics named therein.

AFTERNOON SESSION—1:30 O'CLOCK.

Music.

Address, "Public Charities"—Miss Julia C. Lathrop, Rockford, Member of State Board of Charities.

Music.

Open parliament for the discussion of "How to Increase the Efficiency of the Illinois Farmers' Institutes and Domestic Science Associations." Five minute speeches.

EVENING SESSION—7:30 O'CLOCK.

Address, "The Education of the Blind"—Superintendent Frank Hall.

Address, "The Education of the Deaf"—Superintendent Dr. Gordon.

To be followed by an entertainment by the students of the Institutions for the Education of the Blind, and the Deaf and Dumb.

PROCEEDINGS OF THE SIXTH ANNUAL MEETING OF THE ILLINOIS FARMERS' INSTITUTE.

The Institute met in Armory Hall as per the program at 10 o'clock a. m., Tuesday, February 19th, 1901.

President G. A. Willmarth being absent on account of illness, the meeting was called to order by Vice President L. N. Beal.

Mr. Charles A. Rowe led the audience in singing America, and Rev. C. M. Brown, pastor of the Presbyterian church, Jacksonville, Ill., offered the following prayer:

Rev. Mr. Brown:—We look up to Thee, oh Lord, our God, for Thy blessing, for Thy guidance, knowing that every good and perfect gift cometh down from Thee, for Thou art our God and the creator of all things and Thou art the Father of our soul and we pray Thee that Thy blessing may be upon us and that we may know Thy wish and have Thy guidance through all the things of life. We thank Thee for the prosperity and blessings Thou hast given us. May we follow Thy path, through Christ. Amen.

On motion of Mr. Hughes, the chairman was instructed to appoint committees on credentials and resolutions.

Mr. King moved that all resolutions be referred to a committee on resolutions without debate.

Motion adopted.

The Chairman:—It is very gratifying to see so many counties represented by delegates this morning. We want a report from every one present. That there may be more time for county reports the directors will submit their reports in writing and they will not be read now but printed in the annual report. The secretary will now call the roll of counties.

Adams County—

S. N. Black, Clayton, Ill.: Has been holding farmers' institute for twelve or thirteen years. Held one at Clayton last fall and will hold another at Plainville on the last Friday and Saturday in May. We have people interested in the work, and interest kept up. We were nearly drowned out of our last institute, but we had a better institute outside of that than we ever had. We think the institute is stronger in the hearts of the people and working better than it has ever been. The free libraries are asked for a little faster than our secretary can furnish them.

Bond County—

Mr. Gracey, Sorento: I have to say that Bond county held her annual farmers' institute in December last, as she usually does. We varied the last year from our usual custom of holding institutes. For a few years prior to

that time we had been holding in connection with the institute, some exhibits, which were very successful, so much so that the show about got away with the institute, and a great many of the workers who desired to reap the benefits from the speakers and the parties who had come there to address us on topics that were of interest to us and on topics on which they were posted, we were so much interested in other affairs that we were deprived of that privilege; we felt that we were deprived of the main thing that we really wanted and that was the practical part of the talk by parties who had come there especially to address us on these subjects. The last two years we practically did away with the exhibit or fair part of it and we have had the farmers' institute proper, and the last session was very interesting and the farmers generally conceded that there were more good results through the last institute than there ever was prior to that time. We had Prof. Blair from the State University who gave us a very interesting talk upon the fertility of the soil. He made a talk with which we were all interested. We also had the Hon. Mr. Spies, of Madison county, to address us on subjects which were very instructive.

Brown County—

C. J. Davis, Mound, Ill.: We have been holding a two days' institute each year at the county seat, Mt. Sterling. The last session was by far the best ever held in the county. Interest is growing in every department of the work. Farmers are wanting better live stock, better seed, and better everything on the farm. We organized a Domestic Science Association at our last meeting which will be a great help to the county institute as well as to the women in teaching them the art of housekeeping. We will work for the best results possible in the future.

Cass County—

W. B. Conover, Virginia, Ill.: Our institute has grown from a very small one to a very large one for as small a county as ours. We first started in with very small attendance and tried all of the ways that were known to us at that time to interest the people. We had an exhibit of the principal farm products and had as good speakers as could be obtained. We have had very nearly all the best speakers who have talked at institutes in this State. In regard to our exhibits, to show what we have done and the progress we have made, the first year our corn was very poor, according to the judge; the next year it was a great deal better, and last year we had the best judge and he said it was as good corn as any county institute displayed that he had attended. There is also much interest taken in all the seeds. The farmers are interested in every line that will do them good. We have one or two new ways of interesting the people that we are trying now, and we think it is going to get a good deal of interest started. For instance, in one of our county papers the editor has kindly given us a column. The Farmers' Institute officers have started off by writing a few articles and now the farmers are taking it up. The idea is this—we expect with the help of the State University Agricultural Station, to have a list of experiments this spring; we expect to get the farmers to take hold of this and try experiments. The idea is to have these men report and also to report through the columns of the paper. Another thing we have made an attempt to do is to have men take an interest in and read papers at an institute. We do every thing we can to get the farmer that is interested to get up on his feet.

Whenever I see a man in the audience that I know knows something about the subject and will not say any thing, I call on him personally and ask him what he knows, and then I ask him question after question until he will get up and tell us. Another thing that is helping to interest the young people and make them feel satisfied with the country life is our country telephone. We started a short line with seven or eight telephones some two or three years ago, and we now have some 50 or 60 miles running all over the county, and we are beginning to get into all the towns in the county. It is a mutual affair and it is not only pleasant but profitable.

Question by delegate: What is the expense?

Mr. Conover: The expense is very low compared with what you would have to pay for your town rent. We tried to organize a line which was a partnership, first. After a while we found we were growing, so we incorpor-

ated. We started in with a capital of \$600 but have increased it since. Some people who objected to being stockholders to start on said they would rather rent. The result is the rent almost pays our 'phone bill. I think this newspaper idea of ours is about as good a thing as we have struck. The men will ask me occasionally some thing that was said at the last institute. It gives a person an idea if two or three people ask you of a subject—it gives you an idea what would be a good thing to write upon, and now our farmers are taking hold and making reports, and it also stirs up discussion. We had a report of one young man from our county, who attended the State school, on stock judging, and from another young man who told us about corn judging, and we expect to keep that thing up right along. Individually, I know that it has done me a wonderful amount of good. I have learned things that have given pleasure in farming, and I know it has kept me there and made me feel like there was something for me to do and at the same time it has saved me money by learning what to do and what I had learned at these institutes. Certainly it did not cost me any thing, so I am bound to be ahead.

I forgot to tell you about the most important part of our institute. In connection with the regular work of the Domestic Science Association, they have practical work in the kitchen at their homes. They meet for practical work at the homes of the members. They practice cooking, I suppose. I am not old enough to advise any of you men on farm topics, but there is one thing I feel safe that I can advise you on and that is to use every influence you have in getting your wives to join a club of that kind. All you need is to get to taste the good things they will cook for you the next week after they have been to one of these meetings.

Champaign County:—

Mr. J. H. Hossack, Champaign: The Champaign County Farmers' Institute is again in trouble, the cause being that in one of our enterprising towns where we held an institute last winter, their local committee sent in an invitation: "Come! Necessary funds guaranteed." There doesn't appear to be any trouble in that kind of talk, but when this same committee appear on the ground and say, "If you don't come to our town we will run an institute in opposition to your county organization"——

We have just held two very enthusiastic institutes this winter, one at Rantaul, January 18-19, the other at Galena, February 13-14, 1901, and we have calls from five towns at the present time for the location of our next winter meetings. From this you see us in the position of Dickens' character "Boots," in "Martin Chuzzlewit"—"all a-calling for their boots at the same time." From this you will see that our method of holding two institutes per year in the north and south ends of our county is waking up our farmers to their own interests.

Christian County:—

Harry Grundy, Morrisonville, Ill.: Christian county held the 14th annual institute at Taylorville, December 12, 13 and 14, 1900, one day being devoted to domestic science, under the skillful management of the ladies.

A lively interest was taken in all topics discussed by the farmers present, the absence of expected prominent speakers being apparently no detriment. The attendance, however, was disappointing, considering the good weather and roads. An exhibit of farm products was held in connection the previous year and the attendance was large. This was omitted at last institute on account of the large amount of work connected with it and other reasons. It will probably be tried again at next meeting. A very large number of farmers in the county fail to attend the institute from some cause and it is a problem how to reach them and induce them to come out. The institute should be, and in fact is, an index of the degree of advancement to which the farmers have attained and a measure of their ambition to excel in their chosen calling and should be earnestly supported by every enterprising farmer in the county.

Coles County—

H. F. Hill: We held a meeting the week before Christmas and we also held an exhibition in connection with the institute. We worked hard for three months in getting up the program and in preparing for this exhibition. We secured the court house in Coles county, having a room with a seating capacity of three or four hundred for our audience and a room about half the size of this for exhibits of fancy work and kitchen display and farm products. Then we had a basement nearly as large as this for poultry. The room that was set aside for the display of kitchen and fancy work and farm products was filled with as fine a display as I ever saw. The basement was filled with poultry, but the audience room was not filled. I know I am in a minority here in regard to exhibits. Nearly all those who have spoken think it is a good thing. I do not. The officers of our institute positively said we would have nothing more to do with it, if we had to kill ourselves working for the exhibit. We have come to the conclusion that an institute should be a school and not a show. The people wrangled and said our awards were not made properly, and some of the ladies cried when the steel range went to somebody else, and they said it was all out and dried before we got there. In the poultry display the awards are still causing trouble.

In the way of program we had Henry Caldwell of the Eastern Illinois Normal, Mrs. Joseph Carter and others that were well worth hearing, but we could not get the people away from the exhibits. They would not go up stairs. It might be that I am mistaken. I know this, I would not work any more in that line of work. I want to make it a school and not a show.

DeWitt County—

W. S. Harrold, Clinton, Ill.: The DeWitt County Farmers' Institute was held at Clinton December 18, 19 and 20, 1900, but the attendance was not as good as in the past. Those present manifested much interest in the meetings.

For the first time one day and evening was given to the ladies. They discussed various subjects, the most important of which was the topic of Domestic Science by Mrs. S. Noble King, of Bloomington, in which great interest was taken.

Edgar County—

E. G. Taylor: The Edgar County Institute held a three days' session in Paris, the meetings being well attended. There is a marked growth in the value of the institutes to the farmers of Edgar county.

Franklin County—

J. M. Vancil: I want to report for Franklin county that we had an institute last November some time and had the pleasure of having the vice-president of the State Institute with us on that occasion. The exercises were very good. The display we had was very fine. There was one thing about it I did not like—and one thing I never have liked about Franklin County Farmers' Institutes. It is next to impossible to interest the ordinary farmers from the country—the young men from the country around there. You can not get them out. The attendance there, the vice-president remembers, was very small—so small that we could not even have any meetings. The citizens, to their credit, took an active part in our institutes and helped us materially. We have not given up in despair. We are going to try something to interest the farmers of Franklin county and get them out and make it one of the grandest counties in the State, especially in the line of horticulture.

Fayette County—

Eli Foucht, Vandalia, Ill.; We held an institute in January 30-1. We had quite a good county institute—fair attendance. We are young in the institute work but are making good progress.

Fulton County—

E. H. Diehl, Leeseburg, Ill.: Our third annual institute was held at Lewistown, the county seat, during court week, January 15-16, 1901. The attendance and interest were good. District Director Oliver Wilson was

present at all the sessions. The secretary's circular letter to the township vice-presidents was not a success. It is difficult to get the great masses of farmers out to these schools of instruction who need tuition. We would suggest farm exhibits. The ladies' part of the program was highly appreciated, especially the demonstrations in cooking by Miss Zoll. The school, horticulture, and road questions created the most discussion. I think our institutes should foster the entertainment part of the program along with the educational part. There was quite a demand for the annual reports. Class instruction will be very acceptable to our farmers at future institutes. If we can teach those who attend and put the able papers and lectures read at the institutes into the hands of the non-attendants, we shall have fully succeeded.

Greene County—

Donald Simpson: Our institute was held in connection with the congressional institute at Whitehall in January. As Greene county institutes have been for several years, this one was also a great success. There were no exhibits nor any contest for prizes in either farm, agricultural or any other branch, because we have in our county one of the best agricultural fairs that is held in the State, so no interest would be taken in contests. The party who was to make this report is not present.

Grundy County—

William Reardon, Morris, Ill.: Our institutes are a success, alternating between Mason and Morris in order to give the people a chance to attend. We feel very proud of the success we have been making. It has done wonderful work with us. Instead of plowing up the roads and breaking them up we gravel them—brought about simply by the institute. And another advantage of that, we brought the woman's department into it, which is the life of it. There was some very fine papers read there. Everything is progressing well. We are perfectly satisfied and hope it will continue for it is gaining all the time.

Hancock County—

Walter Vanzile, Carthage, Ill.: I wish to say that in Hancock county we have been in the habit of holding only one institute in the year until two years ago when we commenced holding two. We divided our institutes and hold two a year. This year we held in November at Carthage. We took a little departure from the regular line to start up enthusiasm and gave premiums on cereals and grains and had a good institute. Said so by all. Again we held an institute the week before last at the town of Adrian and I can read you a sketch from the paper here which will do more good than if I tell you:

"As a social event it was a charming affair. As a source of gratification to every one concerned it was a triumph. It was the open confession of several who have attended the farmers' institutes in this county since the organization of that body, that the meeting at Adrian over-reached everything of the kind in the history of the institute, for attendance, interest and enthusiasm, and for benefits received."

I want to say that our county is growing fast in the line of good work.

Henry County—

Sherman Rishel, Cambridge, Ill.: Henry County Farmers' Institute was held at Orion on December 6th and 7th.

It was one of the most interesting and successful meetings ever held in the county. The program was complete, and with one or two exceptions, carried out as published.

The day sessions were given almost exclusively to papers and talks on farm topics. The two evening meetings were generously sprinkled with music, and papers on topics of interest to the ladies were well rendered and received.

The hall was packed at both sessions, many being unable to get into the building.

Henry Wallace of Des Moines, and Prof. Holden of Pekin, were with us, and to them we owe much, as they proved to be good institute workers.

The expense of conducting our institute was \$75.40.

The exhibit of farm products was good and the committee paid out about \$40 in premiums offered in cash and trade by the business men of Orion.

Iroquois County—

David Brumback, Danforth, Ill.: I will say, Mr. Chairman, that Iroquois county holds one institute a year, usually in the month of February. We just held ours last week, Thursday and Friday. There is a great interest taken in institutes in that county and aside from discussing general farm topics, we frequently—generally, in fact—hold an exhibit of farm products in connection with it. This year we did not for the first time in a number of years. And also let me say that there is a branch of domestic science attached to it. We invite the ladies to compete for premiums in cookery, and discuss domestic science questions. This year the institute was held in the opera house at Gilman, and our attendance was very good. In the discussion of topics we have ladies take a part as well as gentlemen, and as a rule there is nothing lacking.

Jackson County—

J. M. Galbraith, Carbondale: Jackson county held its institute on December 6 and 7 in connection with the congressional institute and we had a very interesting and instructive program, including topics which the farmers of Jackson county and the twenty-second congressional district were especially interested in and it was a splendid one. It resulted in creating a great deal more interest in this work in Jackson county, especially, and also in the district. We feel that next year we will have a better institute and better interest.

Jersey County—

C. E. Nash, Jerseyville, Ill.: Jersey county had an institute this winter—interesting one. Good exhibit; instructive addresses. I think the agricultural interest in Jersey county is growing and advancing.

Jefferson County—

L. N. Beal, Mt. Vernon, Ill.: The annual meeting of the Jefferson county institute was held at Mt. Vernon, November 22-23, 1900. The weather was extremely bad during the entire meeting, so the attendance was less than what it would have been under more favorable weather; and what the excellence of the program demanded, but the interest manifested was gratifying to the officers. We were assisted by two professors from Champaign and several other gentlemen besides our local talent.

One half day was given over to the Domestic Science Association, who rendered a very interesting and instructive program.

All the meetings were very interesting and instructive, especially the evening sessions when the town people attended the meetings, many were not able to find standing room in the hall. We think that the discussion by the home talent is of more lasting good to the farmer than that of outside speakers. The sociability caused by discussion and the interest taken by each and every one has been of lasting good to every part of the county, so we always have a discussion at the end of every paper.

We held a call meeting February 14, 1901, of one day, to finish the program consisting of four papers left over from the last meeting.

Lake County—

H. D. Hughes, Antioch, Ill.: Lake county is getting there with both feet. It has only had an institute working three years; it was organized three years ago. The first year she held one; the next year three. This year we held one of three days in December, one for two days in February, and she is getting ready to hold another of two days in March.

Logan County—

W. H. Evans, Lincoln, Ill.: Our farmers' institute sessions are usually held early in December, at a time, when the farmers are least busy, as corn-gathering is out of the way, and the roads are generally good at that season.

Our mid-winter fair is of vast importance, and furnishes an interesting and educational feature of rare worth. We employ the expert system and score-card in judging corn and butter and lose no opportunity to secure the very best talent obtainable in all other departments.

At first we found it rather difficult to get our corn-growers to conform to the standard of excellence and a few yet feel, that it is not quite fair, to cut their score, on account of a fourteen-inch ear, regardless of its manner of filling or uniformity of grains, etc., and while we do not have as many entries in the corn and butter departments as we had a season or two ago, the uniform standard is very much higher, showing that our more enterprising farmers are taking an interest in the whys and wherefores interrogating the judges after scoring has been made, and are profiting by their mistakes.

The butter department is in charge of a regularly organized butter association composed of our leading butter makers, and an unusual amount of interest is manifested.

A detailed score-card is attached so that each exhibitor may see wherein the butter is at fault, and the judge explains the reasons for his decisions, so that it is made an educational feature of rare value. The standard of exhibits is highly creditable, and its influence is being felt in our town markets.

The separator product is classified separately, but in the open sweepstakes it does not always win, but there is a higher uniform average of excellence, than the butter made by the old system.

The pastry department is always an attractive one. The cakes and bread are placed in showcases. By so doing they are not only kept in better condition but show off to a much better advantage. In this, as well as some other departments, we can not much further encourage entries for lack of exhibit space, notwithstanding we have four large rooms in addition to the secretary's room and the auditorium. We had sixty cakes in our December show.

We feel that our display of farm products would do credit to the most enterprising county fair.

The poultry department is under the auspices of the Logan County Poultry Association. They hold a show distinctively their own.

We attach a great deal of credit to the superintendents of the various departments.

The best way in the world to get people to take an interest in any enterprise is to give them something to do.

As a matter of course the chief management and a large share of the work devolves upon less than a dozen wheelhorses, but using diplomacy the younger sons and daughters are given assignments, and we have them calling it "our Institute" and inviting their neighbors before they know it.

Give young people a place on the program, as assistant superintendents, or even as ushers, and the proud father or mother will likely be on hand to see how well it is performed.

Our literary program requires the most thoughtful attention. We aim to infuse new thoughts and new lines of discussion each year, holding close to the fundamental features, that must needs be emphasized.

Securing local talent for heavy topics, is perhaps our most difficult task.

We have observed that a speaker will usually talk best before a strange audience, but by drawing upon the most available, we feel that we are constantly adding to our intelligent discussions. An evening session is given up to the school children of the county under the direction of our county superintendent of schools. The program consists of declamations, original essays

The Chairman: Do you have a show with your institute?

Mr. Spies: Well, yes, we had a show. I don't believe I said anything about the show. I believe I am the originator of shows in the State of Illinois. I tell you what I think about the show. Take for instance a horticulturist and he wants to explain to you about apples. You have a corn grower or an expert on corn and he wants to demonstrate what corn to feed. If he has got the ear corn or he has got the apple he will tell you the name. I believe that a practical demonstration in corn will teach the boy or his father either, what a good ear of corn is by showing him a good ear of corn and telling him why it is good. I have learned a whole lot by a show and I think it is a good thing. I call it a show—we ought to call it a fair. Have it in a house where you can lock it up during the institute hours. Let the people spend their leisure hours—that is between institutes, with the show. Let them come and see the exhibits, let them bring their produce and let them show it, give them little premiums but do not open the show out on the street and let it run away with you.

Marshall County—

H. A. Judd, Wenona, Ill.: Marshall county held its tenth annual meeting in the last of November and first of December—the most interesting and enthusiastic meeting ever held in the county. The attendance and exhibits were good—never was any better.

Mason County—

Charles E. Himmel, Bishop, Ill.: The Mason County Farmers' Institute was held in Mason City, Ill., Oct. 3-4, 1900.

The officers had secured the very best talent both at home and abroad. Mason county has a reputation of being up-to-date in institute work, and if we are to judge by what speakers from a distance tell us, and by the large attendance at our meetings the time is near at hand when Mason county will rank among the first in institute work. We have also held an exhibit of the leading products of the farm, garden and kitchen.

The exhibit featured is one that we have maintained in connection with our institute, and we find it to be very successful. The merchants in town largely contribute to the prizes, and it adds very much to the interest of the institute work. We hope to more than duplicate the interest manifested this year in our next annual meeting.

Massac County—

R. Byrd Leeper, Unionville, Ill.: Attending farmers' institutes is like reading good agricultural and horticultural papers. In nearly every issue of any of the leading farm journals of our country is to be found some one or more articles worth more to the reader than the subscription price an entire year, provided he will put in practice its teachings. If he fails to do this he might as well not read. So it is with the instruction we receive at these meetings. Getting the theory and making practical application of it afterward are two different things, and we are of the opinion that if one instructor only were sent into a county and he be required to hold a one-day institute in each precinct, going out into the fields and orchards and giving such demonstrations as the season of the year would admit, naming the different characters of soils met with and the proper treatment of such, pointing out noxious weeds, etc., teaching how to find and combat injurious insects that prey upon our fruit trees, giving a few lessons in stock-judging, and encouraging the school boys (who should and could be present) to make observations in various ways and report same, etc., etc., that we would, in this manner, be able to reach, interest and benefit the masses, and especially the youth of the country, to whom we are to look for future results rather than to their fathers, who are already "sot in their ways." We must carry this work into the school room. The other side of farm life must be shown. The beauty of nature and the science of plant growth must be pointed out and understood to the extent, at least, of awakening an interest and an inquiry for more knowledge.

If Christianity is taught alone in theological seminaries, if the gospel of Jesus Christ is preached but once a year and that at county towns, few are likely to be converted. Let us carry the gospel of agriculture and horticulture right into the homes of those we are seeking to reach. If the mountain will not come to us we must go to it.

It may be argued that this will prove too expensive. Not so. Instead of defraying the traveling expenses and hotel bills of several speakers on different topics let the one man sent into a county be competent to deal with all these subjects and then we have but one R. R. fair to pay and no "board bill," for he will be entertained gratis by the farmers and transported from one precinct to another without expense.

If you say, "No one man is competent to do this 'all round' work," we will ask if our University is not as thoroughly equipping her students as are our normal schools at Bloomington and Carbondale theirs. They send their students out, not one to teach mathematics, another physiology, etc., but competent to teach all the branches required to be taught in our public schools.

This system would of course, "knock a number of good fellows out of good jobs," but we believe, if this missionary work was practiced for one or two years we could then afford to return to our present system and find our assembly halls packed with eager participants and our new and expensive school buildings crowded by farmers' sons anxious to gain information to take back to the farm, not into other lines of business.

Menard County—

R. Y. Kincaid, Athens, Ill.: I did not come here with the intention of submitting any report of our institute. In fact our president did not appoint any delegates to the State Institute until last Friday evening and I happened to be like Mr. Converse here, of Cass county, on the telephone line, and by some means he heard I was going to the State Institute and called me up and wanted to know if I would not act and I said under the circumstances I would and I was not expecting to submit any report because I had not been notified. However, I will say that we held our first institute in Menard county five years ago and it was a very meager affair. We had a right good program but no audience to address. It was in the opera house and we were very much chagrined because there was nobody there to hear the program. Still we did not lose courage. Kept up the next year and had better attendance. The third year we decided to have a little exhibit in connection with the institute and we had a very good exhibit and a very good program and a good audience and I would say that through that exhibit there was some very practical lessons given to our farmers. We had an exhibit of corn. I suppose you gentlemen all know what that consists of. There were very few samples of good corn shown, however, the next year they had an exhibit also in connection with the institute and everybody was surprised at the exhibit of corn. The improvement that had been made in one year in the selection of corn. First year some of them had great long ears this way and you could almost put your fingers in the rows. The second year there was more uniformity and conformity to the score card. Of course the first year there were a great many people did not know there was any such thing as a score card. A number of those who had exhibits the first year and of inferior quality too, got their eyes opened. This year they made an exhibit at the Corn Carnival at Peoria and one of these gentlemen got the Black Hawk Corn Cultivator prize in the shelling contest—the best shelling corn, and three of the other gentlemen who are right in my neighborhood, also won on corn exhibited thousand mile tickets over the various railroads for themselves and wives.

Morgan County—

W. H. Stevenson, Jacksonville, Ill.: I assure you that our present presiding officer has not done the fair thing. Mr. Joy is president of the Morgan County Farmers' Institute, and it is his place, I think, to make this report. However, I can say that three days in November we held in this room a

very creditable and profitable farmers' institute. We, of course, have the same obstacles to contend with as the other counties in the State have to contend with. The greatest ones have just been referred to. It seems almost impossible in spite of the best efforts of the officers and those interested in the work, to bring out that class of our farmers who need the work the most. Those who need most instruction in corn raising, of hog production, of cattle feeding, of conserving the fertility of the soil and kindred subjects, are the very men and very women whom we can not bring here to our meetings, and that is one subject, I think, the members of our institute should study more carefully in order that we may reach them and benefit them in the days to come.

Montgomery County—

Edw. Grimes: The fifth annual Farmers' Institute of Montgomery county was held in the city of Litchfield October 9, 10 and 11, and was a decided success.

The program was not overloaded, nor was there any need of an apology by the president because speakers were conspicuous by their absence. Every one responded promptly, and I assure you that but little old straw was threshed over.

Breeding and management of swine is an important subject with farmers in this county, and President Willmarth gave us some good, wholesome ideas on this industry.

Cow Culture, by W. H. Row, of Jacksonville, was very interesting, and I am quite sure that farmers were benefited by his talk.

Cow Peas, by Mr. Abe Brokaw, was just what we needed. This is a new crop for this locality, and, from what information we gained from Mr. Brokaw's address, it will doubtless soon take the place of clover as a fertilizer.

The care of milk on the farm and for city trade is a subject of great importance to many farmers in this county, especially in the vicinity of Litchfield. This matter was ably handled by Osker, Erf, B. S., of Urbana, and great good will be obtained from his address. Other subjects of interest were discussed, and much information gained. Good results are sure to be the outgrowth of this institute meeting.

The business men of Litchfield did the handsome thing, and deserve the warmest praise for their kindness.

Ogle County—

A. F. Moore, Polo, Ill.: The Ogle County Institute was held in conjunction with the 9th Congressional Institute at Polo this year. This was the 13th annual meeting of the Farmers' Institute in that county. The institute has brought us hard roads. One of the great questions we are discussing now is the centralization of our district schools, and that brings good roads and better education—a higher education for the children. The great question of the fertility of the soil is every hour before us, and we are running this fertility out by the millions of dollars and we want to discuss that question in every institute in this State.

Another thing we ought to have more of our State Farmers' Institute reports published. There is only a few—a small per cent of the farmers that attend these county institutes in a county, although he passes around from one town to another, and we ought to have a large number of these State reports published and circulated throughout the whole community. Wisconsin has 60,000 of them. We have not over 10,000. We ought to have 80 or 100,000 of these reports published.

Piatt County—

W. M. Dewees, Deland, Ill.: I will make a brief report of Piatt county. However, I did not know that I was expected to make that report, but in the absence of any one from that county, I will say that we have annual farmers' institutes in Piatt county and have had them for eight or ten years.

They have always been well attended. The interest has been very great and the product and result of these institutes has shown itself in practical application throughout the county. The efforts of these institutes has been to blend scientific methods with practical methods, and deduct from this something that would be of utility to the farmers of our county.

We have sought to inspire more confidence in the farmers—more confidence in themselves. We have sought to inspire a higher regard for the profession and occupation of farm life, and I think that I have seen clearly the product of that effort. From year to year there have been different features introduced into our institute. One year ago the advocacy of education in our rural schools as bearing upon the interest of agriculture was advocated. In our last session, as a result of that, we had a number of essays from the children of the different schools. written on these subjects.

Here let me suggest an answer to that question raised a few moments ago in regard to arousing interest among our farmers. Did you ever think how near the child was to the parent? If you get your children interested thoroughly in the pursuit that you respect, and you give the children the thought that your profession is a noble profession in life, then you bring your energies to bear on the schools you have in those districts and demand that those children should be educated in the elements of the soil. It is your right that these children, by virtue of the taxes you pay, should be educated for the profession you want them for. I think, gentlemen, that this is a key to the situation, and if we expect to develop agriculturalists in the future that will be abreast of all the rest of the competing lines in the various industries in life, we have got to meet the situation and be abreast of the conditions.

I wish to say, in our last institute, which was held in December, in connection with our congressional district institute, I was absent the first day of that meeting. The other two days I was present; the attendance was not as large as has been in previous meetings and I am not able to account for that. The interest seemed to be very great, the topics varied and covered a scope of vast amount of information and from those discussions were deducted much knowledge, and he who came there for instruction, secured much valuable information. The institute was a success. I will not say as some have said, that we hold the best institutes in the State, but I will state that it is the object of our county to make the best possible institute with the circumstances and material we have at our command, to advance the cause of agriculture. If others have held better institutes than we have, we are glad of it and bid you God speed, and bid you welcome to our county to give us ideas and help our work. My heart is in this work and I feel a deep interest in it and I hope to see the time when the State of Illinois will stand the equal of any state in agricultural pursuits and will lead in intellectual thought in the agricultural pursuits of this Nation.

Pike County—

Mr. W. A. Reed, Pittsfield, Ill.: The eleventh annual meeting of the Pike County Farmers' Institute was held at Pittsfield, December 13 and 14, 1900. A very interesting program was rendered, and a large attendance was present, the average being above four hundred and fifty. Some of as good talent as could be procured was with us as entertainers for the people. While Pike county may not be able to boast of as many broad acres of black prairie corn land as some of the other counties in the State, yet we think she is up-to-date and even in the band wagon when it comes to improved methods of farming, stock raising, fruit growing, apple orchards, rural free mail delivery, good roads, farm telephones, and good looking women. An exhibit of farm products and culinary articles was held in connection with our last institute meeting which we think added much to the interest of the meeting. There are some among us, however, who think the exhibit detracts the interest from the institute when both are held at the same time; but, nevertheless, they all had a good time.

One session of our institute was given over to the ladies who proved to be good entertainers. They finally completed the organization of a county Association of Domestic Science by electing a full set of officers and a delegate to

the State Association of Domestic Science. The next meeting of the county institute will be held in Griggsville, and in advance of that we bespeak for it a success, for it is in the hands of a set of officers at that place who don't do things by halves. All that attend that meeting may expect to be royally entertained.

Pope County—

H. Lloyd, Golconda, Ill.: Pope county has held five institutes and this winter held two meetings and our attendance is not as great as we would like but there is much interest manifested. We are here with six representatives to-day, although we are way down at the south end of the State and some of us had to drive 18 to 25 miles to the railroad, but now we are here trying to get some benefit from this meeting.

Pulaski County—

W. H. Leidgh, Village Ridge, Ill.: I have not got a very flattering report, Mr. Secretary. We just commenced three years ago I believe, the introduction of institutes in our county. The next year we did some better—had very good attendance. Last October, 26th or 27th, I believe, we had two days. Attendance was good. The program was well rendered. Good articles were read, and on the second day the ladies took charge. The Ladies Domestic Science Club had part of the day, I might say, they gave us a fine dinner and that struck us all about right. In the afternoon their session was far superior to the gentlemen part of it. We have got a kind of combination in our county. We have a grange there yet and they seem to be alive yet. They have a good hall—a two story hall and we have to rent that. We have not got the institution scattered over the county as it should be. Some one mentioned the idea of township institutes. That is one thing I think that we should spread, and get more in touch with the people. Our secretary did not furnish me any report of our meetings so I have to report from memory. We will try to do better next year.

Putnam County—

W. B. Mills: Putnam county is the smallest county in the State you know, but it is a long while since Putnam county has not held their annual institutes. We have some of the older institute workers in the State and while we only have two townships, it is too large to get along with one annual institute. We go from one township to the other, and so on, and the idea is being discussed of having township instead of county institutes. It seems that would in a great measure answer the question as to how you are going to reach the farmers. Mornings like this it is hard to hitch up and drive very far to attend a farmers' institute and I think more institutes on this plan would be an advantage.

We have followed the idea for a number of years of offering premiums for farm products and we like it. Some, I know, discourage it, but we think it is helping our institute. We used to have one session during the institute for the benefit of the ladies. They take the president's place and run the meeting. The women in Putnam county attend the institutes quite as generally as the men and our halls are always full.

We, of course, depend, as has been suggested, on some of the speakers from abroad. I think it is well to have one speaker for each session from abroad. We use largely local talent men, women and farmers, and there is a whole lot of it. All you have to do is to put them on the program and give them a chance. That's where we get the social mingling together—talking over those questions so it does the most good. Putnam county holds its institutes now in the fore part of the winter, in December, and their halls are full and always interesting and entertaining.

One thing I want to speak about, and that is our school contest. We have a school contest for the evening session from the different schools of the township. Let each township have its contest first and select its representatives and then at the final have the contest on the evening of the farmers' institute and offer prizes there for the winners.

Shelby County—

W. E. Killam, Tower Hill, Ill.: The Shelby County Farmers' Institute has held two sessions during the last year, one at Shelbyville in October, and one at Tower Hill the last of January. The attendance at Shelbyville was not as good as it should have been, but the program was satisfactory to all there. The attendance was quite good at Tower Hill, and a good interest manifested. We think it will help our institute to change around over the county. At each session of our institute the ladies have organized a domestic science association, and it is hoped that it will spread all over the county. The ladies are given a half day at all sessions of the institute.

St. Clair County—

Fred Keck, Belleville, Ill.: St. Clair county holds an annual institute in the month of November, usually. It did this last November and we considered it a successful institute. Had a very good program which was very well discussed. Very much interest shown and at the two days' session we had about five meetings.

Tazewell County—

Val. Graff, Minier, Ill.: Two years ago we moved the institute to a town they call Minier. They took no interest in it. They held the institute, however, and it was very successful. Last year we renewed it and had a little better and now about the fifth, sixth or seventh of February they had the institute again at Minier, and they had the 14th congressional district institute held at the same time and we were pretty near overloaded. We've got some pretty good halls in our town but we didn't have room enough. We could not accommodate them all.

The very farmers we want to get at the meetings are the ones that are hard to get. But we do not get discouraged. I have watched farmers, and take one good farmer in one neighborhood and it won't be long until the farmers kind of model after him a little, and so just let us keep on with our institutes and we will reach them by and bye.

Vermilion County—

W. M. Bines, Ridge Farm, Ill.: I thought every delegate here would have a report and I noticed the program suggests that the delegates have the reports in writing and I supposed that they would be handed in to the chairman, but there has been so few reports I thought I would write mine. It is a very short report anyway.

In addition to my written report I want to say that a great many counties, I think, today appreciate the farmers' institute and some do not as they ought to. I see my friend Maguire sitting over there. We, as members of the 39th General Assembly, lent our assistance towards the encouragement of these institutes by increasing the bonus that the State gives towards the encouragement of farmers' institutes. We raised the amount from \$50 to \$75. It is certainly a great means of educating the farmers by bringing them together and letting them brush up their ideas and compare their ideas about the farm, stock raising, and road making, etc. These are all important questions. Everything goes towards the making of a meeting a success. A great deal depends upon the county president, and in that respect I want to compliment our president, Mr. Hobson. But I wish every county in the State had a good one. Farmers who have experience about raising any particular crop, sometimes when you call upon them in an audience like this, can not give you any information because they are not used to talking in audiences.

Now Mr. Hobson has the faculty, where I have been and where he presided and called upon some one, and he shook his head, of getting the information out of him. Now there is Mr. Woodford who raised about 50,000 bushels of corn. He asked him a particular question, and the first thing he had Woodford answer him, and in about five minutes he had the people hearing just what they wanted to hear, and that is where the institute did a great deal of good. Some institutes want the speakers from the universities. Well, with all respect to those men and their education and their talent

some now or other I have always been disappointed with their talk. They talk clear over the heads of the common farmer, and it is all typewritten and must be read, and the farmers get sleepy and want to go to the hotel. That is my observation. We want to get together as farmers and talk as farmers.

We had a splendid program. Most of the subjects were discussed by men and women of State, and some of them of National prominence, as masters of these and other subjects.

I will refer to a few of them:

Thos. Bennett, of Rossville, the pioneer of Duroc Jerseys, on Swine Husbandry.

John Fogner, Rossville, on Feeding and Marketing Cattle.

Mrs. Geo. M. Hanley, Hoopeston, Ill., on Poultry Raising.

The Hon. Geo. W. Hobson, our worthy county president, on Stock Raising by Farm Tenant.

On Domestic Science, Mrs. Kedzie, of Peoria, was unable to be with us, but the subject was strongly presented by Mrs. J. J. Southworth, of our own county, who, by the way, is a State worker and one of whom the State may well be proud.

Miss Elvessa Taylor of Catlin gave an excellent report of the work done by the cooking school of the State Fair this year under the supervision of Mrs. Rorer.

Good Roads and Farm Drainage were fully and fairly discussed by Mr. Gross of Chicago, and Chas. Cottingham, of Danville.

Type and Quality of Farm Stock was presented by one of whom I think I can safely say he has few equals, no superior on that subject, A. P. Grout, of Winchester, Ill., the worthy treasurer of our State Institute.

Horticulture was ably discussed by L. B. Ellis, of Ridge Farm, and O. B. Gravatt, of Snyder, this county.

Sheep Industry was presented by U. Grant Fowler, of Hope P. O., this county, a practical farmer of whom we are all proud. He handles on an average about 5,000 head of sheep yearly on his large farm.

On the subject of Farming and Stock Raising, we had placed Gov. Jas. A. Mount, and, as we are within about 50 miles of his old farm home and, as he was a personal friend of our county president, Mr. Hobson, and a great friend of all institutes, we looked forward with pleasure and hope for his presence, but death suddenly cancelled all his earthly engagements. His was a noble life, worthy of emulation by all of us.

Most of these subjects were fully discussed by interested visitors.

Wabash County—

J. R. Brines, Mt. Carmel: We held two meetings in Wabash county. One was held in December, about the 6th or 7th—two days' rain, and it was not very successful; except the domestic science, they belong to a class that don't care for the rain. They took possession on the forenoon of the second day and held a very successful meeting, and I don't see why the farmers could not do as well as they could. We held a second meeting on the 14th day of February—14th and 15th, and I am glad to say we had the best turn out, more interest than I have seen in Wabash county. In less than half an hour after the house was open there was, I think, at least 200 farmers sitting in the room like we are here. Dr. Morris, of Alton, gave an address on feeding cattle; took up the afternoon, and then in the evening we talked on stock and things of that kind. It was one of the ablest talks we ever heard in the county. The next forenoon they held a very successful meeting, and I think from the way things are moving we are in better shape than we have ever been. There are workers there now and they are starting to stir up.

White County—

Daniel Berry, Carmi: White county began to hold farmers' institutes under the auspices of the old State Board of Agriculture. It has been hold-

ing them now for several years. Our last meeting was held last November. One of the most successful meetings we have ever had. We can see the improvement in the farmers all over the county, in improved stock, etc. I will venture to say that White county this year has expended for all sorts of stock, thoroughbreds of all sorts, horses, cattle, hogs, chickens, and such things, in the neighborhood of one hundred thousand dollars. Our last meeting culminated in a very fine show; we had a very successful show. We raise a product there that we are very proud of and we interested the people in this matter. The finest part of our show was the baby show. More babies at that show and finer looking babies than were ever seen before. It showed our interesting work in all sorts of stock.

Whiteside County—

C. A. Wetherbee, Sterling, Ill. We held a very interesting and profitable county institute and in connection with it was also held the Eleventh Congressional District Institute, on 17th, 18th and 19th of October, 1900, in Metamora, with a daily attendance of perhaps 500. The interest manifested was greater than at previous institutes held in our county. We had with us our president, Mr. Willmarth, who gave us an interesting and instructive talk on "The Education of the Farmer;" a good talk by our efficient secretary, A. B. Hostetter, on "The Mission of the Institute;" Miss Breneman of Minier, on "Our Farmers' Wives and Daughters;" Mr. L. H. Kerrick of Bloomington, the champion cattle feeder, gave a talk on "Beef Cattle," that was worth going a long distance to hear, and other talks by able speakers along lines of general interest to the farmer. We encourage the exhibit feature of the institute and we think this added largely to the attendance and interest of the daily meetings, having a fine exhibit of farm products and of the handiwork of the farmers' wives and daughters.

REPORT OF 4TH DISTRICT.

John M. Clark, Director, 260 Warren ave., Chicago.

REPORTING FOR THE CITY CONGRESSIONAL DISTRICTS.

The operations of the truck farmer, commercial florist and small nurseryman who make their living cultivating the soil in and around the large cities are subjects seldom treated in the agricultural papers.



John M. Clark, Director 4th District.

population in this country. One of the largest and best equipped establishments for the culture and sale of shade trees and ornamental shrubs in the west is within the limits of Chicago and there are many smaller ones there as well.

The truck farms are many and of many sizes, the largest 600 acres, next 200 acres and so on down to 40 acres, 20 acres, 10 acres, the smallest being probably three city lots. The average size about 30 acres. Much of the ground used is rented and the annual rent per acre is from \$5 to \$50. The average rent paid at present is about \$12 per acre per year. The crops grown on these farms include everything in the list from asparagus in the field to zinnia in the flower garden. It requires industry as well as skill to be a successful truck farmer; close economy and temperance wins out in this line as in all others, and hosts of truck farmers gain a good living and lay by money. The boys of the truck farm in many cases make good salesmen in the market and in this capacity they find opportunity for exercising talent. To grow the stuff is one thing, and to sell it to the best advantage is another and when these two things are properly combined they are the keynote of successful truck farming.

Few people have a proper idea of the extent of these operations and fewer still are aware that the most productive and best paying cultivated land in any state may be located within the limits of its greatest city. It will reflect no discredit upon the man who runs a rural farm to state that one Chicago acre of cultivated land may ordinarily produce crops which in money value are equal to the ordinary product of sixteen of his acres. A Chicago cultivator can probably make as good a living and accumulate as much money in a given time with ten acres as the rural farmer can with one hundred and sixty acres.

These comparisons are made in order that the industries referred to may be the better understood. We shall not attempt in this report to go into detail in relation to more than one of these industries, and that one will be truck farming, or as some call it, market gardening. Before leaving the others, however, we should say for the Chicago florist that the magnificent extent of his operations and his skill and hustling abilities are favorably known to his craft from coast to coast and far beyond the seas. It has been said recently by an expert in the matter, that more money is expended for flowers in Chicago than in any other place of the same



TRUCK FARMERS SELLING THEIR PRODUCE IN EARLY MORNING TO THE GROCERS AND CONSUMERS ON THE
 "HAY MARKET," CHICAGO, ILLINOIS.

There are greenhouse truckers, who market radishes, lettuce, parsley and cucumbers from November until March. There are hot bed truckers whose most profitable season is March, April and the first half of May. Then comes the out door trucker. Some of them combine the three divisions, many combine two of them, but the majority are in the out door class.

The out door trucker being in the majority a short description of his operations will likely be of most interest. He begins in February to prepare his hot beds and arrange for his supply of seeds. The hot beds he uses for growing his early cabbage plants, his tomato plants, as well as kohl rabi, cauliflower, pepper, lettuce and all others that need an early inside start in order to be ready for outside planting as soon as weather will permit. The last half of March and first half of April is a busy time for him in making ready; ordinarily the season permits of spring plowing during this time and a day gained in the spring often makes a week gained for his first harvesting which means dollars in his pocket. The quick crops, such as spinach, radish and green onions from sets, are the ones he depends upon for his first money from the market, and usually he may take his first load to market in early May. This marketing, from first week in May is continued every working day thereafter until "the frost is on the pumpkin and the corn is in the shock." To and fro he goes in a continuous procession representing an industry in which thousands of people are engaged, thousands of acres cultivated and by which hundreds of thousands of dollars are added to the sum total of the crop statistics of his State. In Chicago we have the "north market" where the trucker can sell his product by the load, the "west market" where he can sell it by the bag, and South Water street where he may arrange to sell it by the acre and deliver it as needed. Then there are the pickle men, the chow-chow makers, ketchup brewers, and canned soup manufacturers, who are all looking for snaps when the supply is plentiful. They want cucumbers, tomatoes, pickling onions, peppers, cauliflower, etc., of the best quality at the lowest price. They help to enliven already lively markets, the crowded conditions and busy activity of which must be seen to be appreciated.

The average product of an acre of ground varies with the article produced. Market onions will yield 600 bushels to the acre; onions for sets will yield from 400 to 600 bushels. An acre of ground will produce five to seven thousand bunches of radishes and four crops per year can be taken from the same acre, so that twenty-five thousand bunches of radishes is a year's product from an acre.

A trucker may plant and harvest spinach, sow the same ground to beans, harvest the beans and sow to turnips. Or he may plant green onions, then beans, then radish and end up with spinach. Onions, which is a standard crop with most of the truckers, can be harvested in time to permit a crop of fall spinach, but when a man takes 800 bushels of onions from an acre of ground, which can be done, he usually feels that the acre has done enough for him and lets it go at that. There is very little of the land around Chicago, however, which is not called upon to produce at least two crops. Three crops is a fair average and as has been shown four crops is not impossible.

The total amount of produce raised on these truck farms would be hard to estimate. There is no rule to work by; "perishable stock," such as the bulk of it is, has to be disposed of in so many different ways that no record, however carefully tabulated, would take in all of it. The question of the total value of produce sold would be just as hard to estimate. Supply and demand are the only regulators, and prices change quickly and without any apparent reason.

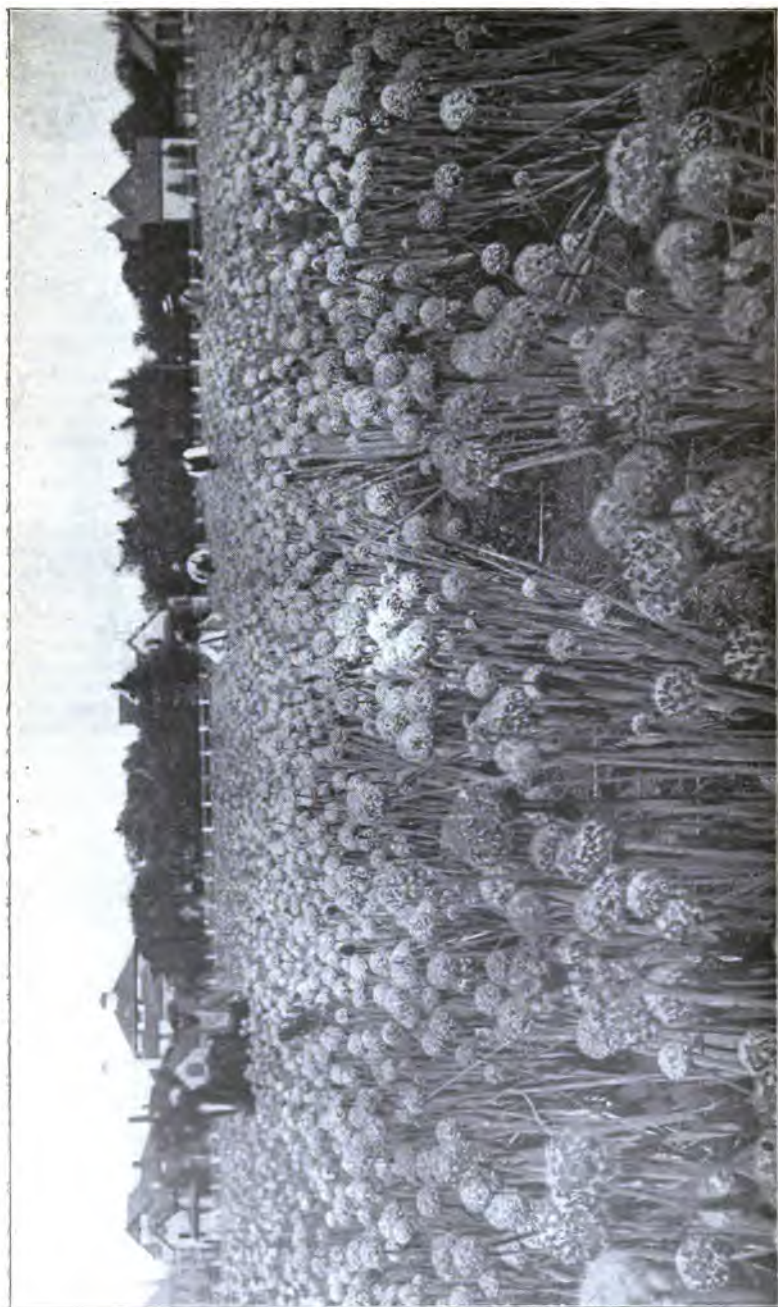
A man on the market may get at 4:00 a. m., \$3 per bag of 1½ bushels of peas in pod, and at 8:00 a. m., not more than \$1; then it often happens that the case is just reversed, the best price being realized at the later hour. There is another thing which makes it hard to form a true idea of quantity raised. A well posted man may think he can surely state what may be expected to come this year from a certain section. He knew that last year such a number cultivated land in that section and harvested this much of one thing and that much of another; well—when he goes out to investigate he

finds that a new subdivision is laid out where the farms of last year blossomed and produced crops, and that most of the farmers have either left for the Klondike or are motormen on the new electric line that runs near the subdivision. Quick changes like these are a regular thing and each year the truck farming industry moves farther from the center of the city. If, as just stated, we can not properly estimate total crops and total values we may be sure that each acre cultivated is forced up to the full limit of production in so far as the skill and experience of the man who rents it can achieve that result, we may also be as sure that what it produces is sold for as much money as he is able to get for it.

In talking recently with one of our large truck growers he stated that the gross annual receipts from each acre of his 200 was, on the average, not less than \$225. Many of his acres would run much higher than that; the average some years might be as high as \$300, but one year with another under present conditions, if the minimum gross receipts per acre should be less than \$200 it would hardly pay. To keep up the fertility where soil is so exhaustingly cultivated is an important matter, and fortunately this is where the close proximity of a great city again comes to the trucker's aid. Stable manure which can be had for the hauling away is not hard to find, and every thrifty trucker takes home a load of it whenever he can do so in the summer, and in the winter months he does little else but haul manure. If he lives too far from town to make it profitable to haul by wagon, he arranges to have it go by car load to the side track nearest his land and a dollar or two above freight charges is all it costs him. A car load to the acre is a help, two car loads are better and three car loads to each acre serves to make up for the ordinary drain. Five car loads of manure to the acre each year for a year or two will make the hardest clay ground produce crops that would make a man's eyes stick out when he sees them harvested, and there are hundreds of acres of this sort of land right close to Chicago that are being worked in just this way.

The prize crop of Cook county is not corn, nor oats, nor hay, but in the matter of onion sets—to use a phrase of a friend of ours—"that's where we shine." There are more onion sets grown in Cook county than in all the rest of Illinois, all of Kansas, Iowa, the Rocky Mountain region, the two Dakotas and many other places all combined. No matter what crop is king in any other county of the State, Cook's onion sets will come pretty near to being his prime minister. Cook county ships hundreds of car loads of cabbage, and thousands of barrels of "kraut" which is made from cabbage. She ships hundreds of car loads of onions and thousands of barrels of pickled onions, cucumbers pickled and cucumbers salted, squash and many other crops all produced by the truckers whose principal effort is to grow enough to meet the home demand but who do not neglect to turn their product into other channels when it pays them better. The home grown product, it may be well to state, is the standard of excellence on the Chicago market. This is natural as "shipped in" produce is not so fresh; besides no soil on earth can grow better garden produce than the soil around Chicago.

The pay of extra hired help and the hours of work they put in are quite uniform throughout the trucking district. Usually it is not difficult to secure as many people as are needed for planting, weeding and harvesting. One good feature about this help is that it is to be had when it is wanted and is disposed of just as soon as the work is finished. If a man has 50 people or 500 it is the same. No complaint is ever registered when his force is told that he is through with it for this time—all they ask is a day's pay for a day's work, or an hour's pay for an hour's work. They want to begin at the stroke of the clock, however, and quit in the same manner. They have no use for the method that begins work at sun up with a long rest during the heat of the day and is resumed again to work until dark. From 7 a. m. until 6 p. m. with an hour for dinner is a day's work, and during working hours they work. The majority of those who constitute these working people are drawn from the Polish and Bohemian settlements of the city and many of them are women. Women are the best weeders; they are also the best harvesters. Men are used for planting and cultivating as they handle the machines better than the women. The majority of the farms of Chicago are within walking distance from the car lines running out from the heart of the city so that



COOK COUNTY ONION SEED FIELD.

these working people go out every morning and back home each night for ten cents. The larger farmers, during onion harvest, charter cars to take out their workers. We have one farm upon which as many as one thousand extra people are used during harvest and ten cars loaded with people go out and return each day during three or four weeks at harvest time. The annual pay roll of this one Chicago farm would build a court house fit for most any county seat. All work is paid for by the day except at harvest time when piece work is the rule. Pickling onions and sets are harvested at so much the half bushel basket, market onions in most cases when grown on a large scale the same. Cucumbers grown for pickling, and in many cases peas and potatoes are also harvested in this manner and many of the active women earn \$3 per day at this sort of work. The method of harvesting onion sets, the way they are dried and stored in the field until cold weather makes it necessary to haul them to the storehouse, are matters of much interest and would give valuable ideas to farmers in all lines of production, but this report may be considered far too long already so it would better be ended.

In conclusion we may say that if we shall take into account the many industries carried on in the congressional districts of Chicago which have a bearing upon the farming interests of the State and are allied thereto, we shall see how important and far reaching they are. We may also see how much good could be accomplished for both parties interested by coöperation, and right here a question arises: Are the State farmers' organizations doing all that they can to enlist the hearty coöperation of their city brethren? If not, why not?

JNO. M. CLARK,

Director 4th District.



James F. Frake, Director 5th District,
132 LaSalle St., Chicago, Ill.



Amos F. Moore, Director 9th District.

REPORT OF THE 7TH CONGRESSIONAL DISTRICT.

H. D. Hughes, Director, Antioch, Ill.

Up here in the seventh district we are working hard to make the Farmers' Institute what we think it should be—an educational institution for the benefit of the farmer.

We held the Lake county institute at Libertyville, during the week of the fat stock show in Chicago, which proved a mistake, as that was too big a show for us to buck up against, and we will not try it again if we know it.

The district institute was held at Millburn, February 1st and 2nd, and proved a great success in every way; good speakers faced good audiences, and everybody was greatly interested and seemed to receive much benefit from the work done. The speakers from the Agricultural College gave especial satisfaction.

We feel that what work we have done in the past will help us to do still better in the future; at least we are going to try to improve as we proceed.

Respectfully submitted,

H. D. HUGHES.

H. D. Hughes, Director 7th District.



REPORT OF THE 10TH CONGRESSIONAL DISTRICT.

John H. Coolidge, Director, Galesburg, Ill.

The farmers of the tenth district are largely engaged in corn growing in connection with pork and beef production. There is no section of the State which has so many comfortable and elegant farm houses and substantial barns and farm buildings as can be found in the borders of the tenth district. Every county in the district has been represented by a scholarship in the College of Agriculture and there has been a marked increase in the number of the boys and girls attending the institute meetings.



J. H. Coolidge, Director 10th District.

The best of speakers are sought after to give instruction at the county institutes, those from the College of Agriculture being in great demand. Many of the things learned at the institutes are being put into practice, and the general tendency is toward better methods in farm work and better things in farm life.

IN MEMORIAM.

George A. Willmarth, for two terms President of the Illinois Farmers' Institute and Director of the eleventh district at the time of his death, May 5, 1901.

At the regular meeting of the Board of Directors of the Illinois Farmers' Institute June 25, 1901, at Springfield, Illinois, the following resolutions were unanimously adopted by a rising vote:

WHEREAS, The Illinois Farmers' Institute has been deprived of the genial companionship, able counsel and earnest and aggressive coöperation in the work of this organization by the death of the late Hon. G. A. Willmarth; and,

WHEREAS, The deceased during his several terms of office as a member of this board, and during his succeeding terms as president of the Illinois Farmers' Institute, has rendered valuable service in encouraging to adoption of the best methods of improved agriculture throughout the State; and,

WHEREAS, Mr. Willmarth labored ably, earnestly and constantly for the cause of agricultural education, and did much in his line to create additional interest in the study of all that pertains to better conditions on the farm, both in the institute meetings and the College of Agriculture; therefore, be it

Resolved, That the Illinois Farmers' Institute esteem it a great privilege and pleasure to bear testimony to the spirit of patriotism and devotion to duty that characterized the efforts of our esteemed co-laborer and friend in the discharge of the labors incident to the several honorable positions he has occupied;

Resolved, That in the death of Mr. Willmarth, the agriculture of the State has been deprived of the services of an earnest advocate of advancement in all lines of improvement in matters pertaining to rural pursuits;

Resolved, That the members of this board extend to the family and friends of the deceased a full measure of sympathy in the death of an esteemed co-laborer;

Resolved, That a memorial page in the forthcoming volume be set apart for Mr. Willmarth, and that an engrossed copy of these resolutions be sent to the family of the deceased.

REPORT OF THE 13TH DISTRICT.

S. Noble King, Director. Bloomington.

With the exception of Douglas county all the other counties of the thirteenth district are devoted to the raising of corn, oats and pasture for the growing and feeding of cattle, horses and hogs and a few sheep.

Douglas county, in the southeast part of my district, raises and feeds cattle and hogs, but I believe her greatest industry is the raising of broom corn.

My district is composed of McLean, Champaign, Ford, DeWitt, Piatt, and Douglas, all lying in the corn belt, and a strictly agricultural district.

Very respectfully,

S. NOBLE KING.



S. Noble King. Director 13th District.



**Col. Charles F. Mills, Springfield,
Director 17th District.**

REPORT OF THE 15TH CONGRESSIONAL DISTRICT.

G. W. Dean, Director, Quincy, Ill., R. D. No. 1.

Hon. G. A. Willmarth, President Illinois Farmers' Institute.

DEAR SIR:—I have the honor to submit the following report of the institute work in the fifteenth congressional district for the winter 1900 and 1901:



G. W. Dean, Director 15th District.

A perceptible difference can be observed throughout the entire district on the farm and surroundings; dwellings are neatly painted, lawns are beautified, fence rows are well set in blue grass, fences in good repair and farmers are sociable. Rural mail delivery and mutual telephones, among the conveniences, are inaugurated by the farmers' institutes; good roads and general farm conveniences are among the improvements. The farmer and his family have learned to enjoy life rather than live in obscurity and make it a drudgery.

The institute work opened on Nov. 11 and 12, at Clayton, Adams county, with an attendance of four hundred for two days, and closed Feb. 17, 18 and 19 at Roseville, Warren county, with an average attendance for the three days of five hundred. This was the round-up, or congressional institute, for the district, at which every county in the district was represented. Each county, at this time, in the district, had held an institute; since, however, Hancock, McDonough and Adams counties have held a second institute. One session each of domestic science was held in Adams, Hancock and McDonough counties.

Through the entire district there seems to be an improvement in the methods of farming, and consequently a greater interest is manifested in the farmers' institutes and the teaching of domestic science is inaugurating a great saving of labor along the lines of household economy and its methods are being adopted wherever they have been taught.

Yours very truly,

G. W. DEAN.

REPORT OF THE 18TH CONGRESSIONAL DISTRICT.

E. W. Burroughs, Director, Edwardsville, Ill.

MR. PRESIDENT:—I have the honor to report one institute each in Madison, Bond, Montgomery, Fayette and Moultrie counties and three in Shelby county the past year. They have all been a success in attendance and in interest manifested. The institutes are officered by active, pushing, successful men who are alive to the wants of the people, and secure the best of speakers as instructors on lines of special interest in the localities in which the meetings are held.

The eighteenth district, situated as it is, and with its many soils, grows principally Indian and broom corn, wheat, oats and potatoes. The live stock interests are great and dairying a special feature. Our mining and manufacturing industries are large, the population furnishing ready consumers at profitable prices besides ample facilities for placing any surplus on the St. Louis or Chicago markets within a few hours.

We feel that the farmers' institute is the best thing that has ever come among us, teaching us to be better tillers of the soil, breed better live stock, read better literature, enlarging our minds, making better men and women, better citizens.

Respectfully submitted,

E. W. BURROUGHS.



E. W. Burroughs, Director of 18th Dist.

REPORT OF THE 19TH CONGRESSIONAL DISTRICT.

D. H. Shank, Director, Paris, Ill.

MR. PRESIDENT, LADIES AND GENTLEMEN:—The nineteenth district is composed of the counties of Clark, Coles, Crawford, Cumberland, Edgar, Jasper, Effingham, Richland and Lawrence: The northwest part of the district is adapted to the growing of broom corn and Indian corn, and many cattle and hogs are raised and fed. The eastern and central part is given to general farming and stock raising. The southern section is suitable to fruit growing.



D. H. Shank, Director 19th District.

We have a great diversity of soils and much need for a proper study of the manner of cultivation so as to get the best results for labor. Institutes have been held the past year in each county in the district. The attendance was generally good and a great interest was shown in all the county meetings and much good accomplished.

The officers of a county farmers' institute should be men and women representing the best element of the farming population. The president and secretary have much influence towards making a success of the meeting. We have been fortunate in interesting good men and women in this work.

We feel that our work the past year has been prosperous and have faith that more activity will be shown in the coming institute season. We hope in the future to enlist school boys and girls in our cause, also ask teachers of district schools to give attention to this work. Believing that much good has been done in our district and in our State through the influence of the farmers' institute, this report is

Respectfully submitted,

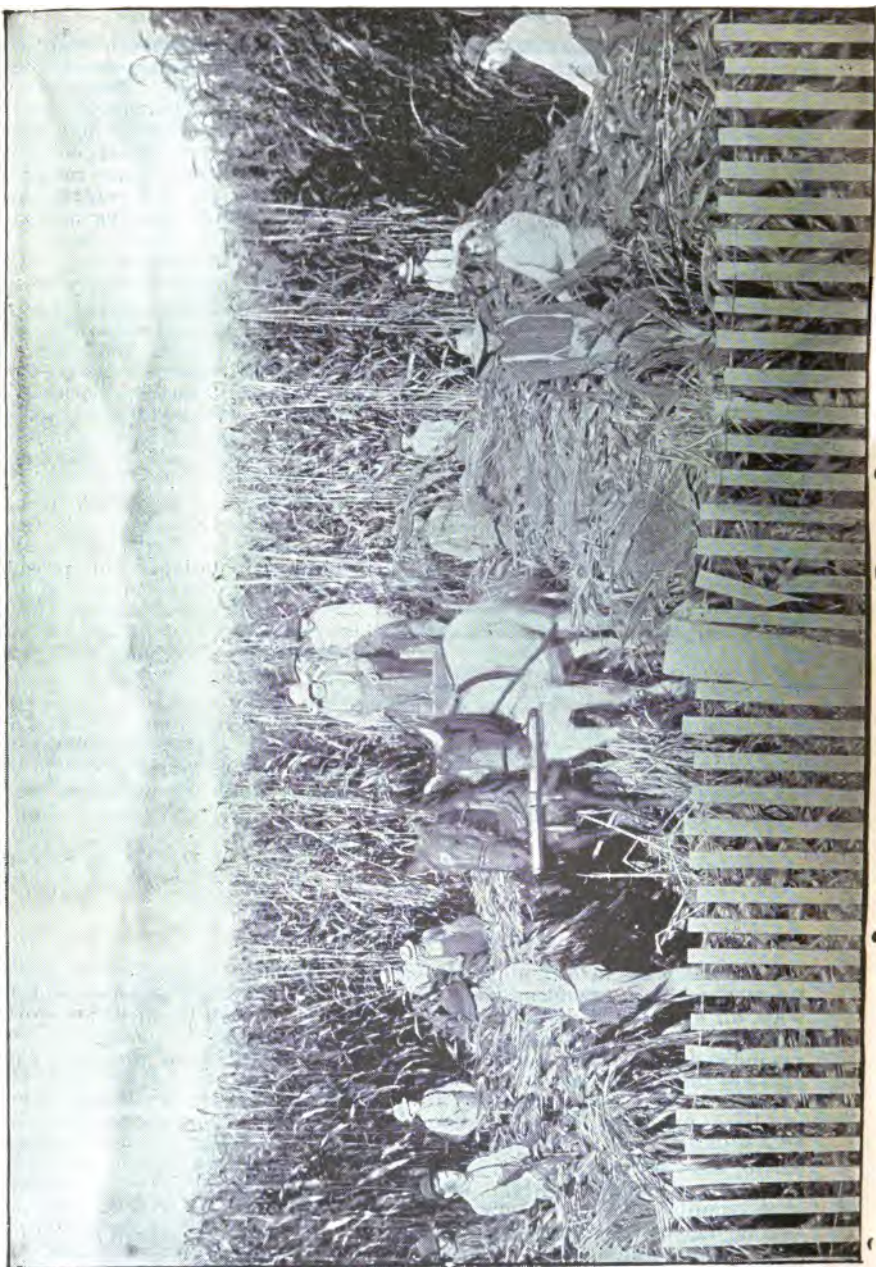
D. H. SHANK.

REPORT OF THE 20TH DISTRICT.

Lt. N. Beal, Director, Mt. Vernon, Ill.

Institutes were held in all of the ten counties on the dates fixed at the conference meeting, excepting Gallatin county which held its institute at Ridgeway, on April 27-28, 1901. There is an improvement in the institute work in the district in the attendance and interest manifested by many who were prejudiced against the meetings. The speakers and those who read papers also are taking advanced ground in agricultural work. The district of ten counties being in the southeast part of the State, contains some as good farming lands along the Wabash river valley as there is anywhere in the State. The farmers grow all the staple crops, and many of them have fine herds of cattle, hogs and sheep. We are also noted for chickens, as southern Illinois is an egg producing country. Some of the counties are fruit growing largely. Such counties as Clay, Wayne, Jefferson, Franklin and White. The manufacturing industry is not great in the district; only a strawboard factory at Mt. Carmel, which uses up the straw raised along the Wabash river valley. The most important manufacturing establishment in the district is the Mt. Vernon car manufacturing plant with a capacity of twenty cars per day; this is of interest to farmers as the workmen are consumers of farm products.

L. N. BEAL.



REPORT OF THE 22D CONGRESSIONAL DISTRICT.

H. G. Easterly, Director, Carbondale, Ill.

Too much credit can not be given to the many officers of the institutes in this district, some of whom devoted many days to making the institutes a success. In but few cases was there lack of interest in planning the institutes and in many was manifest enthusiasm. The general sentiment among the farmers has been of the warmest friendliness toward the work. The attendance has been satisfactory compared with a year ago. The details of the work have been much improved. Fewer topics on the program and more time for discussion; better advertising, and in all a better management of the institute work this year than last.



We are under the greatest obligations to the newspaper fraternity in general for their liberal spirit in advertising and reporting the institutes. They gave freely of their space and were a strong factor in the success of the meetings.

The natural resources of this district are capable of supporting an immense population within its own borders, furnishing both the necessities and luxuries of life. In fertility of native soil, in even temperature, in well distributed rainfall, in cheapness of land, and in fact in all resources which unite to promote a prosperous and successful agricultural and horticultural industry we doubt if it is surpassed by any other district in the State. The handling of live stock offers special inducements and by reason of favorable conditions existing here should prove remunerative even when unprofitable in other localities. The short winters, the luxuriant growth of grasses, pasturage upon which stock may be grazed almost the entire year, an abundance

of water and a supply of all the grains grown in the temperate zone. This district especially prides itself in the excellence of her improved poultry and the value of her poultry products.

While the 22d Congressional hen should have full credit for industry and regular habits, it is to be remembered that her efforts have been directed by the best women on earth and that the credit of one is the glory of the other.

The cow pea is largely taking the place of clover as a fertilizing crop and few farmers now fail to raise some on their farms, the law prohibiting domestic animals running at large has given an impetus to stock raising, and stock feeding is just beginning to find favor among us.

The counties embraced in this district are celebrated for producing apples of the finest quality of any section of the State. Especially is this true of the Wine Sap. They have been awarded the highest praises wherever exhibited, not only in the United States, but also at the recent exposition at Paris, France. The soil and climate seem especially adapted to the production of this apple. Here they attain a size almost double that of those grown in central or northern districts of the State. The color is brighter and the flavor is

unsurpassed by that of any winter apple grown. This is the home of the Ben Davis and Grimes Golden. The only reason we can assign why it is that the people in these favored counties do not devote almost their entire attention to orcharding is that they can produce such immense crops of corn, wheat, hay, etc., that they have been slow to change from a business that is paying them and one they understand to a new one in which they are less versed.

Failure from frost seldom occurs and with the improved methods of combating fungous and insect enemies, there is no reason why this district should not be recognized as the "garden spot" of the world.

Twenty-nine consecutive crops of peaches have been gathered from one seedling orchard in Massac county. When attempting to enumerate the multitude of advantages offered by this section we become lost and are forced to the conclusion that nature has located a part of all good things in this district.

Respectfully,

H. G. EASTERLY.



Walter R. Kimsey, Tamaroa, Ill.,
Director 22d Dist.

TUESDAY AFTERNOON—1:30 P. M.

The institute met promptly at 1:30, Vice-President Beal, presiding. Dr. M. H. Goodrick opened the exercises with a vocal solo. Mr. J. H. Hackett, chairman of the local committee read the following dispatch.

Mr. Hackett—Mr. Chairman, and members of the Illinois Farmers' Institute, I wish to state that Governor Yates up to the very last moment expected to be here. It is due you and due the Governor to

say that he was engaged in good faith by the people, the citizens and the committee and accepted in good faith. I have a telegram here which I will read, sent by the Governor last night:

SPRINGFIELD, ILL., Feb. 18, 1901.

President Farmers' Institute, Jacksonville, Ill.: On account of my wife's illness I can not leave here tomorrow. Have sent by Mr. French my remarks which I hope you will read to the convention.

RICHARD YATES.

I regret, as you all do, that the Governor is not able to be here. I will ask John B. Joy to read the address of Governor Yates. Mr. Joy was formerly representative in the Legislature from this district and being a useful member he was, by the votes of his farmer friends, advanced to the more honorable position of president of Morgan County Farmers' Institute. Mr. Joy will read the address.

Mr. Joy—Mr. Chairman, after an introduction like that it is rather an embarrassing position to be placed in. I have always prayed to be delivered from my traducers. I see I need to pray to be delivered from my introducers.

ADDRESS OF WELCOME.

(By Hon. Richard Yates, Governor of Illinois.)

I have availed myself of the privilege of saying a few words here today, not merely to welcome you to this city of Jacksonville that we think so beautiful, and this county of Morgan that is rich in all the elements that go towards making a model county. This matter of welcome can safely be left to hundreds of public spirited citizens, who are always ready to welcome conventions and societies of all kinds. I am here to express my high appreciation of the work that is being done in such meetings as this, for the farmers and the agricultural interests of the State of Illinois.

The Anglo-Saxons called the farmer the "feorm man," because he was firmly bound, body and mind, to the few acres from which he must with difficulty wrest his scanty subsistence. This same condition is almost within the memory of men now living. It is true today, in a very different sense, that the farmer is the "firm man" of the State and of the Nation. It is a true, though trite saying, that the farming population of this and other states are the stable portion of the commonwealth.

Horace Greeley said, 'I would have been a farmer had any science of farming been known in my boyhood. I shook from my brogans the dust of the potato patch, because there were no books or papers setting forth the processes and natural laws on which the science of agriculture is based. Practical treatises on botany, geology and chemistry were not found in the school room in my day. Agriculture was supposed to be the work of oxen, and that it was an ennobling science, was not inculcated.'

The advance in these lines during the past decades has been marvelous. Note a few of the recent steps forward in these lines. A secretary of agriculture has been added to the president's cabinet. The agricultural bill to-day carries a total of nearly five millions of dollars. Agricultural colleges have sprung up, in which the science of soils, plant life and forestry are taught. Only within a few days have I noticed a call for experienced men in forestry. Illinois students, under the direction of a dean of husbandry, have recently won, over several contesting states, a valuable trophy in a live stock judging contest. Uncle Sam now calls at the Illinois farmer's door every morning, and hands him the news of the world. Any number of instances of advance in these lines can be cited, and I believe much of the progress has been accomplished in meetings of the people interested in such affairs, such as are to be held here this week.

I heartily approve of the efforts now being made in Illinois to get for its Board of Agriculture a more permanent organization, and to get it more thoroughly recognized by the State authorities. I approve of all efforts to get the work of practical teaching and training in these lines more thoroughly systematized, so as to bring the benefits of agricultural teaching and training to all the people.

Frequently I see in large headlines, A New Master Intellect of Industry or Finance. Why not announce occasionally, a new master intellect of agriculture? President Schultz, a learned Egyptologist, claims to have discovered that alfalfa was once king in Egypt, and that it will soon dispute the primacy of corn in this country. He at once made practical tests of using the ground seed, and one subject gained nine pounds in eight days, and another eighteen pounds in twenty-three days. Let the good work go on. The old theories are fast being exploded by the practical farmers of today. The theory of Malthus, that mouths were multiplying so much faster than corn grew, as to bring us to the verge of starvation, has long since been exploded. The scientific farmer can today adopt the motto, 'The more the merrier.' Ricardo said that the best land was taken first, and you would in the end find some men up in the rocky corners of creation starving to death. The intelligent American farmer who has a stock of the know-how capital, has proved that the earth is not so stingy and mean but that it will always respond to proper treatment, and by proper treatment must be meant, scientific treatment, the treatment that is only given by men who think, and are skilled in their work. The time is long since past when man need to contend with man for mastery. It is unnecessary for men to fight over narrow boundary lines to see which one shall eat and which shall starve. The trained farmer knows that there is food for all. Of course there is another question arising in our day, of how this product is to be divided, so that it shall reach all who need it. The farmer is certainly doing his part in the production of it, and it is to be hoped that the philanthropist and men skilled in government will see that no monopoly or trust shall keep it from going to feed all the people willing to pay the price, in honest effort of mind or muscle.

The common complaint among farmers today seems to be that their sons and daughters are being attracted elsewhere, mainly towards the large cities. It must be remembered that the city people are very enterprising in this direction. They are using every means to attract your sons and daughters to the great cities. They are taxing themselves and bonding the cities. They are spending millions of dollars in beautifying the parks, millions in paving. They are mortgaging their cities for future generations to pay. They expect to attract your children, and after they have obtained them, know that they will pay off the debt that they have incurred in attracting them to their borders. This is very adroit management on the part of the inhabitants of the cities, and it can only be met by equal effort and equal good management on the part of the farming community. The farmer should not complain of losing his sons, unless he is willing to put forth an equal effort with the men in the city, in endeavoring to make the farm work both remunerative and attractive. An amount equal to that paid out by the city people for pavements, if paid out for good roads for the farmers, would greatly enhance the pleasure of living there, and would keep many from moving to the city.

After all, it is not more industry that the farmer wants. The man with the stone hatchet and the wooden plow was very industrious. It is trained, well directed industry that is needed, and the promotion of that, I understand, is the object of such meetings as this. The ancient fell down in abject awe in the presence of thunder and lightning. Today his descendants stand erect, and with praise on their lips, because by the exercise of their intellect, they have discovered that lightning is a very beneficent arrangement and will give a steady light between carbon points, and will be a very obedient servant. I apprehend that there is the same difference existing between the "feorm man" of ancient times, and the intelligent American farmer of today. It is true that the farmer who improves his farm, and causes it to produce more, is a public benefactor—as much so as the man who invents a new machine, or harnesses some power of nature for his use. The power of

example and competition is so great in these days, that the farmer who realizes a larger product from his farm is benefitting his neighbors and the whole community. I am glad to have gone up and down the State of Illinois, and have met the men who produce on its farms, and I realize that the man who keeps in touch with the people of the State of Illinois, must always endeavor to know the needs of the great farming population of the State. He must listen to those men who are the great producers of wealth, the conservators of the home, the very foundation upon which the stability of our State rests.

The Chairman:—The response on behalf of the Farmer's Institute will be given by Oliver Wilson, chairman of the committee on State meeting.

Response to the address of welcome, by Oliver Wilson.

Mr. Wilson:—Mr. Chairman, Ladies and Gentlemen and representative of our honored Governor of Illinois: I want to assure you that it gives me pleasure to respond to this address of welcome coming from the Chief Executive of the great State of Illinois. I feel that at the present time I am not only here to represent the citizens assembled in this hall, but I have been called upon to represent the farmers in every county in the State of Illinois and I feel assured that I can safely say for every farmer, every Farmers' Institute worker, every tiller of the soil in Illinois, that he heartily responds and accepts the courteous hospitable words not only from our Honorable Governor, but from the chairman of the local committee of Jacksonville. We are here assembled not for selfish purposes. I presume that if we would go and ask each individual here present what is his main object of being present at this meeting, the answer would be one and the same, it is for the purpose of receiving education, it is for the purpose of receiving that social and intellectual culture that can not be received any other way except by the mingling of one with the other. They will also tell you that we are here for the promotion and the advancement of agriculture. Agriculture, the basis of all wealth of Illinois and all the nation, needs to be represented. Look back, if you will, but half a century, and the idea that the tillers of the soil would take the time to come together and discuss their own interest, was a thing unheard of—unthought of. But for that purpose alone we are assembled here today. The Farmers' Institute of Illinois, holding, as we are, the 6th annual session under the law passed by the General Assembly of the State of Illinois, has been so far a success. It is true that it is in its infancy but six or seven years ago when the law came into effect there was but 32 counties—less than one-third of the counties of the State of Illinois—that held Farmers' Institutes of any kind. Today there are 102 counties holding Farmers' Institutes. The attendance at these Farmers' Institutes, by the records, show that there have been 40,000 farmers in attendance at these various institutes. So we come to the point that 40,000 are being educated in this high school, if you are pleased to term it, in the higher branches of agriculture, in the science of agriculture, and we have spent in that time almost the number of days equal to two legal school years.

Is there any reason why agriculture in this 20th century will not develop? The time has gone by where as it was of old, agriculture is naught but the drudgery of the ox team. That time has passed. There need not be any drudgery on the farm. There is hard work on the farm, but with the improved machinery and the better education and the better understanding in regard to the soil, drudgery has ceased to exist and today the 20th century farmer takes his place along with any and all classes of people in the modern improvements of the day. The Farmers' Institute of this State has done its work in regard to that.

The Governor in his address says that the cities are drawing from the country home. They are doing it by their attractive streets, by their attractive buildings. But I want to say to you, that the Farmers' Institute of this State is bringing out into the farm homes those same attractions that we find in the cities. We are bringing out into those farm homes a better system of

schools. We are advocating a better system of education. This Farmers' Institute is responsible today for erecting one of the grandest agricultural buildings that the world has ever known, in our neighboring city of Champaign. It was born in the mind of agriculturists and was carried through with a great spirit. So it is that we are developing a higher and a better spirit of agriculture. The Farmers' Institute is today filling a long felt want for reading matter. It has today in active circulation, 41 circulating or traveling libraries. They are going the rounds here and there. Those 41 libraries contain something over 2,000 volumes of not only practical agricultural literature, but of the best literature of the day. These volumes are being read by thousands in the farm home. It is bettering them and teaching them and bringing them along in line with the progressive agriculture. Also in this State under the direction and in connection rather, with the Farmers' Institute, is the Domestic Science Association. It has been said that our girls and our boys are leaving the farms to fill the various places in the city or business life, but the Domestic Science Association has come in and it is making home makers, home lovers of our daughters, of our girls, of our wives and of our mothers. It is teaching them the science of home-making and we believe that it is not only essential that the housekeeper shall know how to cook, but they shall also be a home maker. This institution, although new, probably only two years old, is organized in over one-half of the counties of the State of Illinois. They are doing their work. They are holding their Domestic Science Schools at the various points, and girls from the various counties in the State are there receiving instruction. This is some of the work that is being done by this Farmers' Institute and it is going on and on and developing all this talent and power that has been lost to the world. There is no reason why, if this institute work goes on, that if this scientific agricultural education proceeds, that in the very near future we will see great minds in the agricultural world, the same as we find in the inventive and business circles of life.

There will be questions that will be discussed here that will concern not only the farmer but every other class of people. In this program you will find that its wants, its needs are suited to every condition of life and we ask you here, we ask the citizens of Jacksonville, the citizens of every city in the great State of Illinois, to come into these farmers' institutes, and help make them a royal success. We have faith in the live men and the live women in the town that can produce such men as Yates and others we might mention. We believe that everything will be well. Let us look then carefully and see whether or not we will make this the greatest institute that has ever been held.

It is not necessary to prolong these remarks. I am a believer also in the thought that the words of welcome should flow from a full heart. I believe also that the response to an address of welcome should be that warming up that we feel, and I feel that in a very brief way I have expressed the thought of this assembly, and I again have the honor and pleasure of accepting the cordial welcome that has been tendered us by the citizens of Jacksonville.

REPORT OF THE SUPERINTENDENT OF INSTITUTES.

Ladies and Gentlemen, Delegates from Domestic Associations and Farmers' Institutes, co-workers in the development of our great State of Illinois: It is a great pleasure to meet so many here today who have taken up the work of the institute and carried it on so successfully in the several counties of the State. We had this morning reports from the delegates of a large number of county farmers' institutes. These reports of the delegates have given a much fuller outline of the work accomplished by the county meetings than I could give and have been full of valuable suggestions that will help to make the institute more interesting in the future and their work more practical and efficient.

The President of the Institute, in his annual address, is expected to outline the policy to be pursued by the institute in the future and its possibilities for greater usefulness. There remains, therefore, for me to give only a summary of the past year's work.

Since the annual meeting at Mt. Vernon one year ago, 103 institutes have been held in Illinois. Twelve of these meetings were held in October, twenty-three in November, thirty-one in December, twenty-three in January and thirteen in February.

The officers of the county farmers' institutes are entitled to great credit for the able and efficient manner in which they arranged the programs and conducted their county meetings. The State can make a liberal appropriation, the directors of the State Institute can advise and recommend, but only the county institute officers, by personal effort and much hard work can create the local enthusiasm that makes an institute meeting a success.

That the county officers have done their work well is evident from the reports made by the delegates, and the character of the programs submitted for publication and with the itemized reports. The programs have not been so heavily loaded with topics as those of last year, yet there is room for some improvement in the direction of fewer topics for a session and a more thorough discussion of those treated of. There has been an increased demand for the ~~speakers~~ ^{speakers}. They have had practical experience in the branch of agriculture ~~tr~~ ^{tr} where the ~~li~~ ^{li} who have been able to present the subject in a practical way returned.

The county ~~institute~~ ^{institute} ~~and college of agriculture~~ ^{and college of agriculture} are becoming more interested in the work of the experiment ~~station~~ ^{station} and as a consequence are making greater demands upon the University corps of teachers for speakers. The subject most prominently before the institutes the past season has been the all important one of maintaining soil fertility. Fewer people have been placed upon institute programs to tell why the boy leaves the farm, and greater efforts have been made to interest the boy in the institute meetings. The first step in progress on any line is the realization of present conditions and the desire for something better. We can see hope for better things in the fact that some of the institutes have discovered that they have been threshing over old straw year after year, using nearly the same speakers with practically the same audience each time.

Do not misunderstand me. We do not wish to undervalue the services at institutes, nor the experience of men past the prime of life. We honor them and respect them for what they have done and the lessons derived from their experiences are invaluable. We would not wish to lose a single one of them from the institute meetings, but we do want to see a stronger effort made by the county institute officers to fill the vacant chairs with the young men and the young women of the community where the institute is held. There is much force in the old saw: "Old men for council, young men for war." A campaign, whether military or civil, is most successful when carried on by the young, under the advice of the more experienced.

The hope of agriculture in Illinois is in the energetic, enthusiastic, industrious young men and young women, who are to take up the work of cultivating the farms and perpetuating the homes, where the fathers and mothers leave off.

Whether our great State, with her almost unlimited natural advantages, will continue to advance on agricultural lines and increase the productivity of the soils and multiply the variety of products to meet the requirements of an increasing population, or whether the soil be robbed of its fertility and the food resources of the State gradually diminished, will depend entirely upon the ability of the coming generation of farmers to combine the experiences of the past with the discoveries of the present, in developing better methods of farming.

The question of interesting the young people in the work of the institute is one which should have the careful consideration of the officers of county institutes and the committees on program. The plan adopted by Ford county institute of giving prizes to the young men for the best speech at the county institute on a farm topic, and for the best acre of corn grown, the competitor to give a description of the methods of cultivation, kind of seed used, yield per acre, etc., resulted in a marked increase in the number of young people

in attendance at the meeting. Other counties which have given the younger people formal recognition on the programs have secured a larger attendance of the younger members of the farmer's family.

The organization of township institutes, or perhaps better, the organization of less formal, social clubs for the study and discussion of matters pertaining to the farm and home life, would be helpful auxiliaries to the county institutes. These clubs could meet in the homes of the members and be monthly or semi-monthly. Report of the work done by the clubs could be made to the county institute. A number of such clubs in a county would create rivalry and stimulate enthusiasm for the work. Such clubs should include both young men and young women and they would have many advantages over the exclusive women's clubs of the towns.

If some arrangement could be made with the College of Agriculture to aid such clubs with suggestions in regard to course of reading and study, their value would be greatly increased. Such clubs would not only be of assistance to the county institute, but would be the agents to put into practice the lesson given at institute meetings. They would also be a science & for the agricultural college by creating a desire for higher housekeeping agricultural lines.

This institute

If the enthusiastic students who are now at the college of agriculture would cooperate with the county institute officers of their respective counties during the summer vacation, they could each one easily organize a farmer's club, in their home neighborhood. In this way over 100 clubs could be started this season.

THE DOMESTIC SCIENCE ASSOCIATION.

The officers of the Illinois Association of Domestic Science have been doing excellent work in organizing county associations, a report of which work they will present on Thursday. The county domestic science association's sessions are an essential part of every county institute program. Many of the most instructive, practical and entertaining programs have been provided by these associations. They have increased the attendance at institute meetings and bring its work into touch with the home life.

The 18 volumes on domestic science topics kept by the Illinois Farmers' Institute for the use of the county domestic science associations have been in constant use and more orders for books have been received than could be supplied.

ILLINOIS FARMERS' INSTITUTE FREE LIBRARIES.

An important feature of the Illinois Farmers' Institute work and one which is doing much for the advancement and pleasure of the people of the distinctly rural districts is the free traveling library.

These libraries are especially valuable because they are performing a use not heretofore provided for by any of our educational organizations. They are successfully placing books within the reach of those, who on account of their isolation and their inability or indisposition to secure good literature for themselves, are without any.

These libraries are carrying good books to those who live out on the broad prairies, at the cross-roads and on the farms, on the hills and in the valleys. Those who can not avail themselves of a tax for library purposes nor supply the conditions which would make them the recipients of the gifts of Carnegie or other philanthropists.

A year ago we had the pleasure of reporting that 21 institute free libraries had been equipped and were in use. The institute expended upon these 21 libraries \$547.52. At the board meeting in June, 1900, \$500 more was set aside for libraries, and from this amount 20 libraries were equipped at a cost of \$488, making a total of 41 libraries now in use. Of these three are now on their third trip out, 18 on the second trip and about to be returned, and 20 on their first.

The list of the places where these libraries are located is too long for enumeration; suffice it to say that they are scattered over the State from Winnebago county on the north to Massac county on the south, and from Vermilion to Adams county east and west.

The reports from the 18 libraries first sent out were not as complete as they should have been from the fact the patronage of the libraries was greater than anticipated and the supply of receipts and stubs for reporting was not large enough to meet the needs of the librarians. From the reports received it appears that the libraries were in use on the average four and one-half months each, that a total of fifteen hundred fifty-seven (1,557) loans of books were made in that time. There were in these 18 libraries a total of 687 volumes, independent of the books of reference and bulletins contained in each set. The community securing the use of the library pays the express charges from Springfield and return and is entitled to retain the library for six months. The application for a library must be signed by at least five responsible citizens, endorsed by the president and secretary of the County Farmers' Institute. The applicants name a suitable party for local librarian and designate where the library shall be kept and at what times books can be taken and returned.

There are a large number of applications for institute free libraries now on file in the institute office awaiting to be supplied. The general plan inaugurated for the management of these libraries, the list of books selected and the rules for the use and care of same have so far proved very satisfactory to the institute, the local librarians and the patrons of the libraries.

The Illinois Farmers' Institute is well organized for the successful and economical management of the traveling library work for the rural districts. The libraries are in charge of the Secretary of the Illinois Farmers' Institute and handled from the office in the State House at Springfield. The selection of the books and the rules for the use of the libraries are made under the direction and with the approval of a committee selected from the directors of the Illinois Farmers' Institute. The close relations of the State institute with the officers of the several county institutes, who in them are familiar with the conditions and needs of the people of their respective counties, makes it possible to place libraries to the best possible advantage.

The board of directors of the Illinois Farmers' Institute are so impressed with value and necessity of these institute libraries as an adjunct of the institute work in the higher education of the farmer and his family and the development of better methods of farming and home making that they have asked the present Legislature for an appropriation of \$2,500 per annum for the maintenance and extension of the institute free library system. And they expect to get it.

There is an erroneous idea existing in the minds of some people that because the institute library is a farmers' library and managed by farmers that the books of necessity must all be about farming and therefore uninteresting reading. It is true that one of the motives in sending libraries to the rural communities is to put books that could not otherwise be obtained within reach of the farmer and housekeeper that will be helpful to them in their daily work.

Every institute library, therefore, will contain some books on technical agriculture and some on domestic science, but they will be only a small part of the number of books in each set. A book on the diseases of horses or cattle is a desirable treatise for the farmer to have and is a necessity for the successful conducting of his business, yet we do not expect that the farmer will confine his reading to books that pertain entirely to business, neither do we expect that he will gather his family around the evening lamp to read to them of the interesting features of ring bone and spavin, nor of the dangers of tuberculosis. Not at all; the farmer wants books for inspiration and rest as well as for business and it is the intention to have in every library books to supply these later wants. An hour, or even a few minutes spent each day with a good book will often change the whole tone of the home atmosphere for the day. A northwest blizzard or a southeast snow storm can even be enjoyed if taken in connection with the reading of Emerson's poem on the

snow or Whittier's "Snow Bound." A rainy spell in seeding or harvest time will not even cloud the home atmosphere if Whitcombe Riley's "Thoughts for the Discouraged Farmer" be at hand to read:

"Does the medder-lark complane, as he swims high and dry
Through the waves of the wind and the blue of the sky?
Does the quail set up and whissel in a disappointed way,
Er hang his head in silunce, and sorrow all the day?

"Is the chipmuck's health a-failin'?' Does he walk, er does he run?
Don't the buzzards ooze around up there jest like they've allus done?
Is they anything the matter with the rooster's lungs er voice?
Ort a mortal be complanin' when dumb animals rejoice?

"Then let us, one and all, be contented with our lot;
The June is here this mornin' and the sun is shinin' hot.
Oh, let us fill our harts up with the glory of the day,
And banish every doubt and care and sorrow fur away.

"Whatever be our station, with Providence fer guide,
Sich fine circumstances ort to make us satisfied;
For the world is full of roses, and the roses full of dew,
And the dew is full of heavenly love that drips fer me and you."

There are books on food and its functions, on cooking, on cleaning and on home management that are helpful to every housekeeper. A knowledge of the contents of such books would save the mother, especially the farm home mother, many steps, disappointments and worries. The farmer's wife more than all other women needs the companionship of good books, she needs them to people her lonely sitting room with pleasant companions, and she needs them to help her to provide mental food for the development of her family and she needs them to keep the cobwebs from entangling her own brain. The mother needs books too that she can read aloud to her restless, active growing children. Books that will help the children to see in their country surroundings, things that they would never otherwise see. Books about animals and birds and flowers and trees; things they can see and feel and know and love. Books about other children in other countries and other employments. With books at her command the mother by reading aloud can entertain and instruct her children and while they are quieted and subdued by the music of her voice, she herself can gather, even from the child stories, rest and inspiration,

"And the cares that infest the day
Will fold their tents like the Arabs
And as silently steal away."

SCHOLARSHIPS IN THE COLLEGE OF AGRICULTURE.

Through the untiring and energetic work of the directors of several districts, 105 of the 109 scholarships have been filled and all the appointees are now or have been pursuing their studies in the college of agriculture. The directors, as well as the professors in the college of agriculture, are justly proud of these agricultural students. They are doing good work making the best possible use of their opportunities. Many of them have written me of their work and their entire satisfaction with the valuable instruction they are receiving from the University. The students from the Illinois College of Agriculture, selected to represent the college in the stock judging at the great live stock show in Chicago, carried off the highest honors. We hope to publish an account of their work in judging, and a cut of the prize granted them in the next annual report.

Two applications have been already received for the scholarship to be awarded for the year beginning next September. Institute officers should preserve one of the present programs so as to have a list of the students in the college of agriculture, that they may call upon them to prepare papers, judge corn and other grains and to help in the institute work for which they will be well qualified.

INSTITUTE CONFERENCES.

The institute conferences held under the direction of the directors from each congressional district, should have the hearty support of all county institutes and every county should be represented by an active institute worker. A meeting of the delegates at this convention by districts is recommended as a preliminary step toward the regular district conference.

The Illinois Farmers' Institute expects great things from the students in the College of Agriculture and there is no danger of being disappointed.

There is something in the environments of farm life that gives the farm bred boy and the farm bred girl a physical constitution, a mental fibre, a habit of self reliance and a capacity for work which, if once given the opportunity, will put the farm bred boy and the farm bred girl to the front every time.

The honors of the entire University of Illinois have been carried off more than once by students from the College of Agriculture. The Illinois Farmers' Institute is justly proud of its part in the work of developing the Illinois College of Agriculture and having helped to secure an agricultural building worthy of our great State, and having been the means of furnishing in the last two years more students than the agricultural college had in the previous ten years; the institute is now ready to stand for appropriations that will equip the College of Agriculture with all the scientific appliances necessary for the best work upon practical, scientific lines, and supply the most competent instructors that the world can furnish.

An educated, a college educated farming population, means more for the future greatness of Illinois than all other influences combined. It means that the wilderness shall blossom as the rose and that the waste places shall be made glad. It means that the congestion of population in the cities will be relieved and the attending social evils mitigated; it means better schools, better homes, better government and a more prosperous and happy people. This is what the Illinois Farmers' Institute stands for, and will work for and will ultimately accomplish.

The Chairman—The train which is to bring Professors Kennedy and Blair from Champaign to this meeting is late and they have not yet arrived. Mr. Hughes, of Antioch, has consented to entertain us while we are waiting. We will hear from Mr. Hughes.

Mr. Hughes then entertained the audience for a half hour reciting his own and other selections.

Professor Kennedy is now ready to tell us something about live stock.

KENNEDY'S TALK INTRODUCTORY TO CLASS WORK IN LIVE STOCK.

Professor Kennedy.

MR. CHAIRMAN, LADIES AND GENTLEMEN:—I assure you that it gives me great pleasure to meet with you on this occasion. I regret very much that circumstances over which I had no control detained me from being here to take my regular place on this program, but the old adage "better late than never" perhaps will apply to me on this occasion.

It is my privilege to speak to you upon the kind of live stock that are the most profitable as grain and freight condensers. In this connection I congratulate you upon the encouraging outlook for live stock and the live stock industry. I think that in all my experience I never saw a time that offered greater inducements for the production of good live stock than we have in this State and others similarly situated today; but still there are elements of danger. There is always an element of danger in a period of unusual prosperity; in a period that has a tendency toward boom and speculation. There is a great tendency to buy stock regardless of their individual merit, thus the production of inferior animals.

Why do we raise stock is a question that is confronting many an Illinois farmer at this very day? Do we keep stock entirely for the profit in the stock itself? In reply to this very pertinent question I must say that sooner or later the Illinois farmers must recognize the fact that the keeping of live stock on the farm is a necessity. It is not a matter of like or dislike for the day is near at hand when the Illinois farmer must cease the now common practice of selling grain, thus his fame, in the form of corn, oats, sugar beets, etc. He must bear in mind that every time he sells a bushel of corn he is selling 18 cents worth of his farm. This question of maintaining soil fertility is an all important one, but it is not my intention to dwell upon it as my time is limited and I have other points to call your attention to for a short time.

It is my intention to speak for a few minutes on the most desirable types of animals from a market standpoint. The ultimate end of all animals is the block, thus in breeding we must guide ourselves accordingly by selecting sires that most nearly meet this demand.

On chart No. 1 we have the Chicago wholesale method of cutting beef, and chart No. 2 we have the Chicago retail method of cutting beef. A careful examination of these parts and a comparison of the prices of the different cuts will reveal the fact that all the high-priced meat is found along the back, loin and hindquarters, the remainder of the animal being low priced from a butcher's standpoint. Knowing this to be true, we should aim to produce steers with broad backs and heavy hindquarters.

Chart No. 3 is a cut of the famous Hereford bull Dale, which sold for \$7,500. He is probably one of the best beef bulls on the continent. He has a short, wide head, a short thick neck, broad shoulder, good heart girth, well sprung ribs, broad back, loin and wide, deep hindquarters. He is deep in the flank and fine in a bone, a point to be considered in selecting a sire. The handling qualities are all important for they indicate the thriftiness and general health of the animal. A good handler should have a loose, soft mellow hide, covered with a thick mossy coat of hair.

Chart No. 4 is a cut of Viscount of Anoka, the champion shorthorn bull of America in 1900. He possesses wonderful width, depth and compactness of form.

Chart No. 5 is a cut of the forequarters of Aberdeen Angus bull. This shows clearly the width and depth of breast, which indicate strength of constitution. This is an all important point and must receive the careful attention of every breeder.

In recapitulation the main points of the beef animal are good form which means width throughout; depth, compactness of form, good handling qualities, fineness of bone and good constitution. In selecting feeders a great deal of stress should be laid on spring of rib, straight top line and a deep flank, for a deep flank goes with a heavy hind quarter.

Of the various classes of live stock kept on the farm, no animal is more useful as a weed eradicator and profit producer than the sheep. Every farmer should have a small flock to clean up the wastes of the farm. They do not require much care and they yield two profits each year the wool crop and the lamb crop. We have two classes of sheep, the Merino kept almost solely for its wool and the Mutton sheep kept for its mutton and wool. The mutton sheep is the one that will be the most profitable to the Illinois farmer to handle. I wish to call your attention for a few moments to the most desirable type of a sheep to keep from a mutton standpoint. On chart No. 6, I have the Chicago wholesale method of cutting mutton or lamb meat, the highest priced meat is found in the hind quarter or leg of mutton, then the back and loin. The neck, shoulder, breast and lower portions of the body are all very low priced. Chart No. 7 is a cut of a Champion Shropshire Ram. You will notice that he is heavy in the hind quarters, broad in back and loin, deep in body, wide between fore legs, short thick neck and a broad head. His legs are straight and stand well on the outside of the body. Chart No. 8 is a cut of a model Southdown Ram, the highest type of a mutton sheep we have. He is wonderfully broad and well let down in hind quarters, broad in loin and back, short thick neck, deep wide breast.

In examining the wool of a sheep, it is only necessary to examine it in two places in order to form a good idea of the fleece. Examine on side of shoulder where you will find the best wool and on the thigh where the poorest wool is to be found. In examining wool observe the color of the skin whether it be pink, blue, greenish, etc. A healthy sheep always has a pink colored skin, any other color denotes ill health, lack of vigor, etc.

In recapitulation I would say that the main points of a mutton sheep are compactness of form, which would give a heavy hind quarter, broad back and loin, a wide deep chest, short thick neck, wide forehead, prominent eye, legs set well on outside of body, a heavy fleece of wool and a pink skin to indicate good health.

The swine interests of Illinois are immense and on a whole the hogs are of better quality than any other class of live stock in the State. Still there is much room for improvement in swine rearing. On chart No. 9 we have a cut of a perfect fat hog. The requisites of a fat hog are a wide head, a thick, short neck, a broad, compact shoulder, a deep wide chest, forelegs wide apart, a broad back and loin, wide, deep, well filled hindquarters. The body should be deep and carry its width well down. The hind legs should be straight, strong in bone and hog should stand well up on his toes. The hair should be fine, straight and plenty of it. Curly harsh hair usually indicates a hard feeder. Avoid the hog that is long in the body and narrow through, for such an animal will be a hard feeder and a late maturer. Length of body is desirable when it is accompanied by sufficient width. Avoid a hog that is very short in the body, for although it indicates easy feeding, but such an animal will be a chubby fellow and will not possess sufficient frame to obtain best results.

On chart No. 10 we have a cut of a Tamworth, the type of a hog that is so desirable from a bacon standpoint. They are narrow in head, light in neck and shoulder, narrow in back loin and hindquarter, light in ham, but must have a long, deep side and a well developed gammon. They are not as yet a very profitable hog for the Illinois farmer to produce, as it costs more to produce a bacon hog than a fat hog and the American markets pay more for the fat hog.

On chart No. 11 I have a cut of a good type of a dairy cow. This represents Rose, a cross-bred Holstein Jersey, owned by the University. She made last year, when 11 years old, almost 700 pounds of butter. In selecting a dairy cow I would lay special stress on her having a large body, large udder, milk veins and milk wells, for these organs do the work. Before concluding I wish to emphasize a few other points in regard to stock breeding. These are things that I fear many an Illinois farmer is stumbling over at the present day.

Breeding from immature animals is one of the greatest curses to the live-stock industry of this State and also other states. The continued use of immature animals for breeding purposes results in a deterioration in size, weakened constitution, impaired vigor and eventually scrub stock. In order to secure strong constitutioned, strong boned, good healthy, vigorous animals, nothing but mature breeding animals should be used. If people would only observe this rule more closely there would be less dissatisfaction, thus less condemning and the changing of breeds in order to secure desired results. Good people, you can not lay too much stress on this point.

Too much stress is laid on popular strains and not enough on individuality. Good breeding and blood are very important when they are accompanied by good individuals, but in many instances the man buys the pedigree or popular strain and gets the animal thrown in. Many Short-horn breeders are stumbling over Scotch pedigree and red color. Some Poland China breeders are doing likewise. Amos Cruickshank built up the best herd of cattle the world ever saw and his motto was get the animal regardless of color or strain. The average farmer should not handle pure bred females, but every man should keep pure bred males and grade up.

I feel that I have taken up enough of your valuable time and before concluding I wish to say, every morning during the week classes in live stock will be held from 9 to 10 a. m. At these classes matters pertaining to live stock will be discussed and it is especially desirable that each person present will feel free to ask any questions that he or she may desire information on.

TUESDAY EVENING, FEBRUARY 19, 1901.

The exercises of the evening consisted of the addresses by Dr. Frank Hall, of Jacksonville, and Mrs. Nellie S. Kedzie, of Bradley Institute, Peoria, interspersed with music by the Illinois College Glee Club.

The Chairman—I have appointed as members of the Committee on Credentials of Delegates: John F. Galbraith, Carbondale, E. W. Burroughs, Edwardsville, W. B. Mills, McNabb, H. D. Hughes, Antioch, and S. Noble King, Bloomington.

Committee on Resolutions: H. G. Easterly, Carbondale, J. H. Coolidge, Galesburg, A. F. Moore, Polo, C. A. Wetherbee, Sterling, G. W. Dean, Quincy.

I have the pleasure of introducing Dr. Frank Hall, of Jacksonville, now superintendent of the Institution for the Education of the Blind, but at one time the pioneer teacher of agriculture in the public schools of Illinois.

TO WHAT EXTENT SHOULD AGRICULTURE BE TAUGHT IN THE PUBLIC SCHOOLS?

By Dr. Frank Hall, Jacksonville, Ill.

A line of cleavage among modern educators is between those who believe in education for education's sake and those who believe in education for use; between those who advocate art for art's sake, culture for culture's sake, truth for truth's sake, and those who favor all these for the sake of what they will enable one to contribute to the general good; between those who would encourage our youth to seek the "higher life" in order that they may live it all by themselves—gain for themselves "sincerity, poise and contemplative delight," and those who would encourage them to seek higher mental training in order that they may become more efficient in all the relations of life; between those who educate with reference to what the child shall "be" and enjoy, and those who would educate with reference to what the child shall do and contribute to the enjoyment of others.

Those on one side of this line of cleavage are sometimes called utilitarian, or it is said of them that they are mere utilitarians. We have no worse epithet for those on the other side of the line than that they are non-utilitarian. We confess that we believe in utility. We plead guilty to the charge, and admit that we favor such administration of educational affairs as will result in the greatest good to the greatest number. And this is utilitarianism.

From this point of view, that kind of education is the most desirable which will enable one to contribute most to the general good. There are many things of which you and I must remain ignorant. We must know that which will contribute to our efficiency—our efficiency in our chosen vocation, our efficiency as husbands or fathers or mothers, our efficiency as citizens of the republic, our efficiency as servants of the Master of Life.

Anything that will not contribute, either directly or indirectly to this efficiency, I do not need to know, not even for truth's sake, nor culture's sake, nor art's sake, no, not for Heaven's sake. Heaven has sent you and me into the world to minister, to serve. For every ten things we know, there are

ten thousand things that we do not know. Give us that in the training of the head, hand and heart, that will be helpful to us in the performance of our duties as true men and women.

One of the greatest of modern educators has said, "In a democracy, that education is a failure that does not relate itself to the duties and opportunities of citizenship."

Now the first duty of citizenship is self support. One can not be very helpful as a citizen, can not contribute very much to the good of the republic, until he can take care of himself. He who puts less into the public crib than he takes out of it, is a parasite upon the body politic. He who puts more into the crib than he takes out, who earns more than he consumes, whether he does this in the digging of ditches or by teaching or by preaching, whether he does it with a hoe or with an artist's brush, is a public benefactor. Larger contributions to the good of all, should be the aim of educative effort.

But says an eminent educator, "The principal contribution which the average citizen makes to community life, he makes through his vocation." Hence thoughts of vocation must have a place in every well ordered school. Indeed this is the way in which the school work relates itself to the life work.

Samuel T. Dutton, Brookline, Mass.

Harvard, Chicago and Boston Universities.

Social Phases of Education.

THE RELATION OF EDUCATION TO VOCATION.

"We have failed in arranging our educational courses to recognize one of the most vital factors in any civilized society; namely, Vocation."

"Vocation is the chief corner-stone of the home; or, to use a stronger and a better figure, it is its very heart's blood. Vocation is a good deal more than the opposite of idleness. It is labor dedicated to the highest purposes; to-wit, the cherishing of the family and of the home."

"As vocation is the chief support of the home, and tends to develop individual character and manhood, so it clearly underlies the welfare and prosperity of the nation."

"The manual training idea is destined to serve as a connecting link between the abstract and the concrete, between the world of thought and the world of action. It furnishes a revelation of what real education may do in arousing, interesting and holding the energies of the average child. The teacher, the missionary and the reformer have found a new weapon; and manual labor is sure to have a large place in all future educational and social work. But this is not enough. Its results, while excellent in a general way, do not bear with sufficient directness upon vocation. The most serious count of all against our educational system is that it does not provide such trade instruction as enables the grammar school graduate to enter at once upon the pursuit of a handicraft. I need not enlarge upon the great and pressing need of trade schools. Social changes have brought the bulk of our population into the cities, where every idle and shiftless member of the community is a menace to the public peace and welfare. It is indeed pitiful to see our American young men pleading for the opportunity to work and yet failing to find employment because their hands are untrained. Not only in the city, but in the country also, there is need of special training."

"Why should not agricultural chemistry be taught in our normal schools? Why should not special schools for young farmers be established to foster our great national industry.

"Something has been done by private munificence and industrial corporations in planting trade schools, but the time has come when the State must meet this issue promptly and generously if we are to keep pace with the nations of Europe."

I have quoted thus at length from Mr. Dutton because he represents a very large class of modern educators who no longer hesitate to express themselves in favor of such administration of educative affairs as will make apparent to every pupil the relation of the school work to the life work.

There are four great avenues that lead from the schools into the activities of life. These are the professional, the mechanical and scientific, the commercial and the agricultural.

The schools have always provided for those who are willing to perform the duties and accept the emoluments that come through professional life.

The manual training schools and the laboratories of the science departments make apparent to another large class the relation between the school work and their prospective life work.

The commercial colleges, the commercial high schools and the commercial bearing of much of the work in the common schools help to emphasize the importance of mental training as a preparation for work in connection with the distribution of the products of the farms, the shops, and the laboratories.

Least of all do prospective agriculturists find that in the school which especially appeals to them. The prospective teacher, preacher, journalist, civil engineer, and in a small way the prospective merchant seek the advantages of the schools as a means of more perfect preparation for work in their chosen vocations. But the prospective farmer is urged to attend school, to become educated for the sake of being educated. A majority of teachers seem to feel that they are called to do a higher grade of work than that of preparing young men for valuable service in the great field of agricultural activity.

In the legislative acts establishing two of our Normal schools, it is especially provided that agricultural chemistry and vegetable and animal physiology shall be taught in order that the teachers going out into the rural schools should be prepared to present this subject to their pupils. These Normal schools have done some excellent work but somehow they overlooked this legislative requirement concerning agricultural science. In Governor Tanner's address at the dedication of another one of our Normal schools he said—

"My suggestion is that greater emphasis be put upon the teaching of the elements of agricultural science. Too long this has been neglected. Ours is pre-eminently an agricultural and horticultural State. A main source of our wealth is our soil. It is in the interest of the State as well as of the individual owner that its fertility be maintained. To do this it must be 'manured with brains.' Our young people who are to become the tillers of the soil must be so educated that they can read intelligently and appreciate the literature of the farm, including the reports from experiment stations, as well as the practically scientific parts of the best farm journals. These young people must be mainly reached through the country school houses. Are the teachers that are now going out from our Normal schools prepared to give instruction in these subjects? Have they been taught agricultural chemistry and animal and vegetable physiology?"

"It is explicitly stated in the acts providing for two of our Normal schools, and implied in the acts which make provision for three more, that instruction shall be given in the elements of agricultural science. Is this instruction being so given and so emphasized that prospective teachers become interested in the practical side of the subject?"

This leads me to the question which has been propounded to me by your program committee: To what extent should agriculture be taught in the public school? My answer is that it should be taught to that extent which will make it clearly apparent to every prospective farmer and farmer's wife that the school work has a vital relation to life work on the farm. Just as in some schools there is an apparent professional trend, in others a mechanical and scientific bearing, in yet others a commercial tendency, so there should be found that in the schools which would characterize them as a passageway leading up to the most important industry of our State.

But the introduction of even the most elementary facts of agricultural science into our rural schools is attended with almost insurmountable difficulties. Of the 25,000 teachers employed in this State it is quite safe to say that not one per cent of this number are prepared to teach agricultural chemistry or vegetable and animal physiology. Even the very small number of these that have come through the Normal schools have heard comparatively little of these subjects. They are much better prepared to teach algebra, geometry, trigonometry, evolution or the chemistry of the drug store, than they are to teach the elements of agricultural science including the chemistry of the soil and of fertilizers or the mathematics of the balanced ration or the theory of the Babcock test.

In the attempted solution of this problem, we find ourselves confronted with a condition rather than with mere theory. Permit me to attempt to show a way out of the difficulty by a brief statement of what has already been accomplished in another state—the state of New York.

The Nixon law—1894—\$8,000—experiment station, for horticultural experiments, investigations, instruction, and information in the fifth judicial department which included Chautauqua county.

1895, amount increased to \$16,000; Prof. L. H. Bailey; research, teaching, and publication.

1896, \$16,000; twenty-two counties.

1897, \$25,000; the entire state and to agriculture in general.

1. The itinerant or local experiment as a means of teaching.
2. The readable, expository bulletin.
3. The itinerant, horticultural school.
4. Elementary instruction in the rural schools.
5. Instruction by means of correspondence and reading courses.

“The fundamental difficulty with our agricultural condition is that there is no attempt to instruct the children in matters which will awaken an interest in country life. We have therefore conceived that the place in which to begin to correct the agricultural status is with the children and the rural schools. For the purpose of determining just how much could be expected from this source, many rural and village schools were visited during the year, the instructors talking to the children about any object which presented itself at the time. The result was that all the instructors were impressed with the readiness with which the children imbibed the information, their keen desire for it and appreciation of it, and the almost universal interest which teachers took in this kind of work. We are now convinced that the greatest good which can be rendered to the agricultural communities is to awaken an interest in nature study on the part of teachers and children.”

NATURE STUDY RELATED TO AGRICULTURE.

“It will be futile to attempt to instruct the children of the State in nature study by means of instructors from Cornell University. We therefore conceive that the real work to be done is to instruct the teachers in the methods of imparting this instruction. It was with this thought that we began a series of teachers' leaflets and we purpose to present the work at the teachers' institutes and eventually, perhaps, in the normal schools and training classes of the State. So far as the present outlook is concerned, it is perhaps not too much to say that we believe that this movement, directed towards the young people of the rural community, is the most important one which has developed in agriculture since the consummation of the experiment station idea.

“1898, The College of Agriculture has enrolled under the head of University Extension work 15,000 pupils, 10,000 teachers, 1,600 young farmers. Six instructors are employed throughout the State in conducting this work and special teachers are employed from time to time as occasion requires. These instructors meet the teachers of the public schools in the presence of their

pupils and at teachers' associations and institutes for the purpose of illustrating methods of teaching nature studies directly or indirectly related to agriculture.

The result of this pushing of the education motive into the rural communities has been a most decided waking up of these communities which, even if the work were to stop at the present time, would continue to exert an influence for a generation and more.

All this work has been experimental,—an attempt to discover the best method of teaching the people agriculture.

Teachers' Leaflets.

From Apr. 10, 1898, to Feb., 1899.

13 Leaflets.

Cornell Nature Study Bulletins.

From June, 1899, to Jan., 1901.

At the time of the issue of Bulletin No. 1, June, 1899, the department had a mailing list for the nature-study leaflets including 25,000 names. Most of these were names of teachers. This department received upon an average 1,200 letters a week. In a year 80,000 circular letters of instruction were sent out.

CONCLUSION.

In one of the Cornell bulletins I find the following:

"It must be said that the farmers, as a whole, are willing and anxious for education." (Sugar Grove School.) They are difficult to reach because they have not been well taught, not because they are unwilling to learn. It is astonishing, as one thinks of it, how scant and poor has been the teaching which has even a remote relation to the tilling of the soil; and many of our rural books seem not to have been born of any real sympathy with the farmer or any proper appreciation of his environments. Just as soon as our educational methods are adapted to the farmers' needs, and are born of a love of farm life and are inspired with patriotism, will the rural districts begin to rise in irresistible power." And, I add, just as soon as the pupils in our rural schools are made to understand that there is a vital relation between their school work and prospective life work on the farm, will they become interested in their work and willing and anxious to accept all that is provided for them in the school curriculum.

THE VALUE OF THE TRAINED HAND.

By Mrs. Nellie Kedzie, Peoria, Ill.

The world holds value to mean one of two things: It may be the amount of material which can be bought in exchange, or it may be the property which renders something useful to the world.

Studying the trained hand from the first standpoint, we have much with which to fortify the position that it is valuable, because no one will dispute the fact that much of the money of the world is spent for the product of the trained hand. To begin with the necessities of life, we find that only the trained and educated hand can prepare the cotton which comes to our market so that it shall make acceptable dress goods. We find that only the trained hand can take that dress good, and cut, fit and make into garments for us to wear. The cunning workmanship which goes into our shoes, the deft handiwork on the well prepared skins for our wraps; even the shaping of our gloves and the fashioning of our bonnets, is all the result of training somebody's hands to do well the piece of work desired.

We find on our table evidences of trained hands all the way along, from the making of our wheat into flour, to the making of the daintiest morsels put upon the table to tempt the palate. We find only the trained hand is capable of making the sweets for our table, out of the juice of the cane, the beet, the corn or the maple tree. No one would think of putting an untrained man in the work of a flour mill, and I am told that at one of the large sugar

factories, the man who tests the boiling syrup to find the moment for turning off the sugar, is the man who receives the highest wages. Our chemist can tell the exact point, but he is not deft enough to find it in the evaporating pan.

Our meat grows upon the western prairies, but only the lithe wristed cowboy can throw the lasso which starts the ox on his way to our market; it takes a practiced hand to strike the deadening blow, while only the trained hand can cut the veins at just the right spot to drain the body of the larger part of the blood.

After the food is brought to our homes, every housewife who has had to struggle through the hard days of bitter experience, or who has trained a raw Swede or Irish girl to know the ways of an American household, knows there is need of much training for the hands that shall prepare that food so it will become a material which will build up the human body into the most perfect dwelling for the Holy Spirit, "Which Temple ye are."

In all these occupations of life, it is training that counts, and the product of the trained hand means to us better clothing, better food, year by year, simply and solely because of the training which makes better work possible with the materials at hand.

If we question about our habitation, the merest shell of a house today must have for its construction the trained hand at the foundation stonework, the trained hand to put up the timbers, and a man who is "capable" to finish the outside of the house. While inside, no one of us would presume to take up the plasterer's trowel, or the decorator's brush any more than we would today feel that we were capable of properly hanging the paper in the parlor or of setting the plate glass in the windows. The trained hand again must be in evidence or the work is not considered well done.

These are the necessities of life. The money paid out in every instance I have mentioned, is more than half given for the skilled labor which puts the material in place. The cotton or wool or silk costs little for the garment, the making of that material into wearing apparel is what costs. Timber and plaster and paper cost but little, the work of the trained hand take the money.

If then this training is of value as evidenced by the amount of money it can demand for the necessities of life, what shall we say of the amount that is given for the work of the hand which supplies the comforts and the luxuries?

The comforts of a well appointed home show, in every direction, training which has been carried on through long years of patient practice. The carpet-maker's skill, the window curtain manufacturer's long practice, the deft hand of the furniture maker are all brought into constant play, and are capable of bringing us constant delight, because of the training which has given them the power to give us comfort and beauty along with the bare materials which we put into their hands.

The prices we pay for all these comforts of home are largely paid because of the training of the man who does the work day after day, and who does it because we are not well trained enough to do it for ourselves.

Value, then, of the trained hand comes to us also through ability to bring to its owner money which we gladly pay for the privilege of possessing the product of the trained hand.

This for every day comforts; what shall we say of the dainty beauties that come into our lives, seldom perhaps, but often enough to give us an appreciation of what the trained hand may accomplish.

There is no end to the beauty of the world, which brings money because that beauty is the work of trained hands. The Brussels lace which keeps its makers year after year in underground cellars, spending their lives upon one or two pieces of elaborate working out of fancies born of their own sense of beauty, but only worked out because of the training of the hand, gives us some slight appreciation of the amount of wealth that can be put into a piece

of work; and when we pay \$10,000 for one lace flounce, we are paying, not for the thread which was worked into the intricate design—not for the pattern, which cost, in comparison, but a few pence, but we are paying for the training which made that hand capable of working out that pattern with the delicate threads.

We take for a moment the hand which makes the picture on the wall to which all eyes turn in admiration. And while we talk of values can we measure the value of a canvas six feet by ten, though it bring in the open market \$135,000, or does that amount of money show the slightest appreciation of the real value to the world of the canvas which has had upon it the brush of a Michael Angelo?

Can we question the value of the trained hand that brings to our ears the melody of the piano? All the world delights in the music sent out from a set of wires by the trained hand of a Paderewski. The training which he has put into his fingers means ability to make us understand his ideas of music.

Do you say that I am talking now of genius, not of training? Then I say to you that the genius of the artist burns in the soul of many a man and woman who has never had the opportunity to train the hand, and so lacks the power to show to the world the ideas that flame within him.

The genius of a Blind Tom is perhaps more than the genius of a Paderewski; the one was untutored and untrained; the other had the best training that the world could give his fingers, and I leave you to judge of the power the two men have had upon the musical world.

On the other side of the question as to whether the trained hand is useful in the world, I ask you in all seriousness have any of these things mentioned been useful—have they had a definite utility? Who of us would let them slip out of the world if they could? Certainly, if the great mass of people are willing to spend their money for the product of the trained hand, it is of value, for the world today counts a thing of little worth if it will not pay its money for it.

Shall it be only the individual trained hand which the world cares to own? There was a time when the training of the brain for any community meant the training of one or two people; the priest, the monk, later, the minister of the town, had about all the brain training that was given. It has not been many years since a serious question arose in the family, if there happened to be a boy who was frail of body, or who was supposed to be of less than the average intelligence; that question always hinged upon the fact that the boy must, in some way, be able to earn his own living, and if he were below the average of other boys it might be well to send him to college and train his brain. Every community had one or two members so trained. After a time it came to be thought wise to give all the young people of the community a little brain training, because it was soon found that the man who had the most of such training carried more weight in the various communities and made himself of greater value because of his training, whether for a specific purpose or for the general value of an education.

Slowly the thought has grown up among us that everyone is better off for some brain training; that the people live happier lives; that they make more successful communities; that the standard of living is raised; that the power of the nation is greater if the individual has better brains.

We have come to a new era in education where we are looking to see whether the training of the hand will not do quite as much toward helping the world to be wiser and stronger and better as has the general training of the brain; and as one school after another has taken up the matter of teaching every boy and girl to use the hands along with teaching them to use the brains, it has invariably been the case that the mass of students have done better work when deftness of the hand has been required along with quickness of the brain.

Let us consider the value of the trained hand as regards its usefulness in the world outside of its money value; usefulness to the possessor. William I. Crane says, "Nature has given us two channels of expression; the tongue and the hand." Unfortunately civilization has undertrained the hand and overtrained the tongue, as every day bears witness.

While we have been neglecting the general training of the hand, we have still been using this as our best mode of expression; best because it gives greater variety and allows us to give to the people about us the ideas which have grown up in our thinking brain, and have become so strong that we really desire to share them with our fellow beings.

We have but one means of expression with the tongue, that is language. We have with the hand, music, painting, sculpture, architecture, landscape gardening and mechanic arts. We give expression with the voice, as well as with the hand, to the musical ideas which we evolve, but the other five hold us entirely dependent upon the hand for their expression to our fellow men.

While we have neglected the general training of the hand among the people, still we have learned to count as great attainment, ability to do that which demands strong hand work, and we hold, in the world, that the expression of man's hand has meant more in the progress of civilization than has any expression of tongue or voice. In all directions of strong growth we find that the men who think strongest, who have been most powerful to reach their fellow men, have reached them, not only through the voice, but through pen and printing press, and there has come again, necessity for the deft hand. Ideas are of value only as they are well worked out. The board upon the water gives man the means of transportation, but the great ocean liners, while working out the one idea of a floating dwelling, have shown the product of trained hands, until we find ourselves transported with the comforts of life all over the watery world. The brains gave the idea—the hands worked that idea into usefulness.

Look upon the buildings which characterize the great cities of the world; men and women who have evolved the strongest thought have put their thoughts into buildings, on canvas, into musical scores, or have sent out books which have taught people, and have sent from the originator the great ideas which have been developed along the lines of his special thought for the edification of the world in many directions.

If then the hand take five parts, and the tongue but one, can there be any question to the world of the value of hand training? Is not the better use of the hand a help toward making one individual in the world understand another? Is it not a help toward disseminating the great ideas which have been evolved by the strong brains? Of course the thought comes that this special training of which we are speaking is not the generally accepted term, hand training, but hand training in its strongest, best meaning, is simply and solely cultivating deftness of hand, that the ideas worked out by the brain may be communicated to the people within reach of the products of the hand.

There is an extremely fallible idea that manual training is drudgery, that it means learning a trade and nothing else, that it means making oneself into a machine. This is all wrong. Manual training means comparatively just what brain training means. Brain training means ability to think; hand training means ability to do, and no one can think best, unless he can work out his thought; no one can work best, unless he has brain power to think out what he wishes to do.

When the minister was the only man who had been trained to use his brain in logical thinking, he was looked up to by the whole community, and was asked to do the thinking out of knotty problems for the whole town. Today, every man and woman in free America is an independent thinker. The world has grown in its conception of the use of brains. There is room yet for more growth because we see, day after day, more or less people who have need for more thinking and better thinking along the lines of their own individual affairs. We hope to remedy this lack of thought in our communities by better training in our schools; and we talk much of the fact that when we have taught a child to think logically and well we have done the best work for him possible, because he is then able to accomplish anything he wills in the study line.

Today we find the pupils growing up in our schools and starting out into the world with their brains trained to activity, but in many cases we find their hands deficient in ability to carry out the thoughts which their quickened

brains are ready to express if only there were deft fingers. We are in the same condition that we were when the minister did the thinking, helplessly dependent upon a few people to do the work of comfortable living, day by day.

Do you ask, then, if we are all to be so trained that we can do everything? And where will be the specialists?

In reply I answer while we have all learned to read our own bibles, and to do our own thinking, we value our ministers more than ever. While we all know more of hygienic living than was known to the olden time, we have quite as much use for the doctors, and value them as they were never valued before.

It is not special trades, nor special work, for which manual training prepares the owner of the hands, but deftness and ability to use the hand in proportion to the use of the brain. I believe the day will come when the man who can use his brains, and who can only think, will be considered but half educated, just as we today feel that the man who can only use his hands is but half trained. Ruskin says "There can be no happy labor without thought, and there can be no healthy thought without labor." The two must go together, and Ruskin's ideas have been found sound when our strongest men came to the point where brain work was hardest, and need for grave, earnest thought was most apparent. When the "grand old man of England" needed to do his strongest thinking, he shouldered his axe, and marching into the woods, chopped trees, that his hand work might stimulate his brain to stronger action. When one of the best ministers of this country needed to think out his most earnest sermons he wandered through the fields, picking up rocks and digging into underground caves, until, covered with the grime of earth, and filled with the beauty and the glory of the forms which centuries ago were made below the surface of mother earth, his thought was stimulated, till the sermons he delivered to his people carried with them, not the grime, but the glory which came through his conception of God the Father, through the works of God had put upon the earth for his children.

When a woman writer who has perhaps given to this country the strongest novel of the century, washed her dishes and moulded her bread between pages, she brought a practical realization of the science of living which meant more than brain work, more than hand work, it meant both together, and therefore it meant a strong personality which showed to the readers of Uncle Tom's Cabin a womanly heart which could stimulate a strong brain and conceive the great things of life.

The men and women who have given the world something the world wanted to remember, have been the men and women who were no half-way people; they were whole workers, workers with heart, workers with head, workers with hand.

Murillo, Sir Christopher Wren, Rogers, Beethoven, Edison, have all been great men, not only because they could think thoughts for the world, but because their hands were deft to show the world the thoughts that arose within them.

When the story of the life of one of the most accomplished of hand workers, William Morris, was told, his biographer said of him: "He was a man who could influence the housekeeping of half the world, who could paint beautiful pictures, could write sublime verse, compose music, speak four languages; he was a weaver, a blacksmith, a wood-carver, a painter, a dyer, and a printer; best of all, he could help those about him to lead more useful lives, because he could help them do more and better work for themselves and for each other. He could do as well as think. It is well to call him 'Master.' "

If the principles that we have held for many years that it is good to train all children along brain work lines, holds good for the work which gives us one-fifth of the expression of the world, why should it not be well to train the children somewhat in the lines which give us four-fifths of the expression of the world? Have we been a little one-sided in this matter of education?

We hold that every child should be taught to read that he may inform himself of the thoughts of others. We hold also that he should be taught a little hand work—to write,—that he may send his own thoughts into the world in permanent form. If the great mass of humanity, reached as it is through the voice and the tongue, can listen to the training of one part of the body, as we all listen to each other, how much more could it gain if the hands which gave four-fifths of the expression of the world were to be trained as thoroughly as we have, in the last few years, trained the brain of our young people?

We say, in order to understand the thoughts of others, we must learn to think. I say, in order to understand the work of others, we must learn to work. And as we can only expect to appreciate the great thoughts, not think them, because of our stimulated brain, so we can understand great work better if our own hands are deft and ready to do some of the many kinds of work the world demands.

The kindergarten is the ideal beginning of school; and as we have worked the kindergarten idea until we have gained a certain proficiency in it (not that I hold it has reached perfection, but it is growing in that direction), we should put kindergarten ideas all the way along through our schools. Older people have to carry kindergarten work through their daily lives, year after year; why should it be withheld during the restless years of growth, and why haven't we appreciated the fact that growing bodies need exercise and growing hands need training, just as much as do developing brains?

Kindergarten, in its purity, means keeping the little hands busy, while the little brain works, and if in our intermediate grade schools we could keep the hands busy, we should find no difficulty in managing the brain work, because each child would have so many ways of expressing his ideas through his hands, that ideas of work would leave no room for the mischief which frequently brings a child into disrepute with his teachers and parents. "Satan finds mischief still for idle hands to do," is not a bygone saying. It is as true today as in olden times, and the best way to combat Satan in the mischief of the little hands, is to fill those hands so full of helpful, pleasant work that there will be no room for mischief. As we grow older, you will each agree with me that every day is filled not only with ideas our brains evolve, but with working out those ideas for home, for church, for community, for nation; and the working out means deftness of hand as well as quickness of brain. Why should the college girl be given only training which shall make her ready of tongue, when most of her life must need busy, ready hands? The woman who is most ready to do, and who knows how to do, is the woman who is most valued, wherever she is placed.

Less than a month ago I heard a man, who commanded a regiment of soldiers in the Cuban war, say that he was thoroughly converted to the manual training of boys in our schools. His reason for making this statement was because one of the companies in his regiment was largely composed of boys from a town where a manual training school was established ten years ago. He said the manual training company under marching orders was always ready before either of the other companies of the regiment. Wherever they were at night these boys were ready with deft hands to cut logs, to prepare beds, to put up tents, build fires, and to cook meals with so much more readiness of hands than any of the other companies, that he asked them how many of them had ever been in a manual training school. He found that about seven-eighths of the company had been in the school, and had spent about five hours a week in teaching their hands deftness, while about thirty hours a week had been used in training their brains. He immediately said "Give me more companies who know how to use their hands."

Four boys who went out from another manual training school were each given a set of pocket files when they joined the army. During the whole campaign in Cuba these four boys escaped sentry duty, and were allowed to go to their tents and sleep whenever there was sleep for anybody, simply because with their pocket files and their deft hands they were soon found to be able to repair the guns and keep them in order. Their deftness of hand served them in good purpose, and while the man who had only his brains-

trained, marched back and forth in the drizzly night, his brother, whose trained brains could direct deft hands, could sleep and prepare himself for tomorrow's battle.

We are told that during the war the men from the colleges and the learned professions suffered most in times of hardship. They had no power to use their hands until trained by dire necessity to take hold of the rough end of soldier life. We are also told that they were quicker to take hold of this rough end than were the men who were simply diggers in the ditches. The trained brain helped largely toward teaching the hands to work, and to work to good advantage, but a little training of the hand would have helped these men to avoid much hardship, many times to have escaped disease, and fewer of them would have gone into soldiers' graves, because they would have been ready in many ways to prepare for themselves such comforts as were within reach.

The adjustment between mind and matter must be accomplished by the work of the hand. Possessors of ideas whose owners have no ability to work them out, seldom accomplish any good in the world. They are like the woman who wishes to throw a stone, but who shuts her eyes and screams when she raises her hand. If she hits the object it is an accident.

A definite idea, with a trained hand to work it out, means somewhere a piece of good work. If the brain be trained so well that it will evolve ideas, and the hand be made so deft that it will accomplish the purpose those ideas demand, we may expect men and women whose lives will mean more to the world individually, and who therefore will make stronger communities.

Have I demonstrated the value of the trained hand? If we pay our money for its products, if we find it of value to the individual, is it not worth having?

The world has recognized the fact that God gave to his children certain ability to use his gifts and we can only do our very best to learn to use those gifts wisely.

We have been 1800 years studying the lesson of Christian brotherhood, and learning to make our lives mean something of good to those about us. We have found that when we have become most able we can be of most help to the world. We believe that by training the brains of our children we make them stronger, better men and women, who can do more for themselves and more for others because of their ability to think.

We look up to the man or woman who is always ready, in every emergency not only to think, but to do, and urge our young people to emulate the example of those who have been able to think great thoughts—to accomplish great deeds.

When we learn to so train all hands that they can work out the ideas evolved, then we shall have found the true value of the trained hand in the world.

WEDNESDAY MORNING, FEBRUARY 20, 1901, 10 A. M.

Music furnished by the faculty of the Woman's College at Jacksonville.

First hour was devoted to special classes.

Mrs. Nellie Kedzie spoke to the ladies on Domestic Science.

A. P. Grout conducted the exercises on live stock.

Prof. J. C. Blair took charge of class in Horticulture.

Miss May Thompson then sang "The First Song," by Grammen, in a most artistic manner. She was ably accompanied on the piano by Miss Shanafelt.

Rev. C. M. Brown, D. D., then offered the following prayer:

"Oh, Lord, our God, we look to Thee this morning as Thy children for Thou art our Father. We recognize that Thou art owner of the lands; that all good comforts cometh from above from Thee through Thy love and Thy mercy. We ask Thee to grant unto us wisdom and guidance and defense so not to depend upon ourselves and our own ability, but to look to Thee for direction and guidance in all fields, knowing full well if we follow Thee we shall be pleased in this world and doubly pleased in the world to come. Grant Thy blessing upon this day's session. Make it promotive of good and better instruction and better ideas and more thorough knowledge of the things Thou have given to us, for our use and for our glory, amen."

CORN: ITS PLACE IN ILLINOIS AGRICULTURE.

By E. E. Chester.

The wisdom of your program committee in devoting one-half day to the study of corn is to be commended.

No agricultural product of our State is of more importance to every one of our citizens, whether they be of the rural or urbane population. In Illinois we have had corn to burn, we now have corn to plant, corn to feed, and corn to sell. The estimated production of the world is two and three-fourths billion bushels for the past year. Three-fourths of this is grown in the United States of America. One-eighth of this world's supply is grown in our own fertile lands of Illinois. If the price of corn everywhere was thirty cents per bushel, the world's annual crop would be worth 825 million dollars, that of the United States 618 million, and that of Illinois a little more than 100 million. Besides the amount we waste and feed, and the immense amount manufactured into a large number of commercial products, for home use and shipment abroad, the United States can spare for export 10 million bushels of corn per week. For the past four weeks the export has been about double that amount. In producing, in feeding, in manufacturing and in transporting this crop near one-half of the population of the State is dependent for a livelihood.

Lincoln said, "God must have loved the common people, or he would not have made so many of them." He must have loved the American farmer, or he would not have permitted the development of this greatest of plants, from its insignificance in the hands of the American Indian, to its present condition of commercial importance.

Collectively corn is entitled to the honor conferred upon it as King, King in all the domain of plant creation. And yet, like other kings, it is subject to criticism, both in its ancestry and in its posterity. As corn is ordinarily grown, select from your crib for planting, the best ear in one thousand, and there is no assurance that ten per cent of the yield will be as good as the original planting; instead, there is a good reason why it will not reproduce itself to perfection, and the reason is in the law that "like produces like." Inquiries have been sent out to every county in the State, by the Illinois Experiment Station, asking for the number of barren stalks to be found in the fields of corn. Answers have come back furnishing evidence that one-third of all the corn stalks in the State of Illinois are but weeds, cumbering the ground to no purpose, barren of ears. Any one of an observing disposition will have noticed that in a crib of good corn, as delivered from the field, at least two-thirds of the ears are very imperfect, and that a good part of the remainder will not fill the score card, and as every grain on every ear of corn must be fertilized by the pollen of the male, the tassel falling on the silks, the female part of the corn plant, and be absorbed by the same, or no grain will follow. Since one-third of the pollen that fertilized our select ear came from barren stalks (and these are fruitful of pollen, having no ears to support,) and as the three-fourths of the remainder of the pollen fertility came from stalks bearing imperfect ears, and as our corn has come down to us through a long line of just such breeding, is there any reason to expect our extra select ear will produce a large per cent of perfect ears of corn? There-

is also another element of danger in our select ear reproducing itself. It requires a perfect stalk to develop a perfect ear. The chances are that this ear has been fertilized in part at least by the pollen of an imperfect stalk and will transmit this imperfection to its posterity. This leads us to believe that selection alone will not improve our corn plant as fast as it is capable of advancement.

Some of the families of cattle have been selected, controlled and fed with a view, to the greatest amount of the most valuable meat or milk production. That the stockman has been rewarded for the century, or more of pains taking care is undisputed. Today scores of animals may be found, that with intelligent care, will reproduce themselves in kind, almost as often as corn will fail. These will degenerate with neglect or abuse, and become as disreputable as corn is, if treated as badly as corn has been.

The first organized effort made to redeem corn from its unsavory name was in June last, the thought originated in the University of Illinois, and was the result of a few years of study and observation on the corn plant. Experiment work in other lines forbid that corn breeding should be conducted there because of the danger of cross fertilization. A council was called of a few farmers and enthusiasts in the improvement in corn in the university. At Springfield, in September last, the organization was completed and officers elected. Thus was organized the first Seed Corn Breeders Association in the world, with headquarters at Sibley, Illinois, F. A. Warner, Secretary. The organization is not a large one, neither is it thought best that it should be. One of its members revealed his plans to me, and it is believed to be no breach of trust to give them to the public.

From a standard variety of corn that had been improved by selection for a number of years, he selected two hundred choice ears. These were measured for length, and diameter at tip and butt of each ear, and the number of rows, as well as the number of grains in each row were counted. Of these facts a careful record was kept. Two rows were shelled from each ear, and the grain was put in a numbered sack, on the back of which was the above date. A corresponding number was put on the ear.

It has been discovered, that corn can be grown for a purpose, as cattle are grown for milk or beef; or horses for draft or speed. As this farmer desired corn of high feeding quality, he must submit his two hundred samples to the chemist, of the Illinois Experiment Station for analysis. From these he will select fifty ears of good form, and high protien quality, this latter having been decided by the chemist for his breeding plat. This must be isolated so as to prevent cross fertilization, especially on the south and west. These he will plant on well prepared and very rich soil in squares, say eight or ten hills square, from each ear giving each plat the number of the ear from which it was planted. There will be planted three grains in the hill and cultivated deep at first, and later very shallow. When corn is one foot high, it will be thinned to two stalks in a hill. When the tassels begin to develop, pollen on the upright or highest spangle of the tassel, all stalks that do not give promise of a full ear will be cut out or detasseled. At gathering time, each plat will be husked and gathered separate, and select ears saved for future planting. If any plats do not show satisfactory improvement, drop them from the list and save seed from those that do. This will require much time and good judgment in the hands of the busy farmer, but he not only will begin to establish a record or pedigree for his corn, but will, (I believe) cause it to be said in future years, that there was about the beginning of the twentieth century an unusual interest in corn improvement, which has brought the average of the State, up from thirty-two to fifty bushels per acre, and in some individual instances, one hundred and fifty bushels is obtained. This plan of corn improvement will fall upon the ears of many doubting Thomases but with corn planted three and one-half feet apart each way, and one, one pound ear to the hill, the yield will be fifty-six bushels per acre, with two, it will be one hundred and twelve, with three, one hundred and sixty-eight. Can it be done, time will tell. Breeding and feeding has doubled the value of our farm animals, the same care will work wonders in corn production.

The object of the Illinois Seed Corn Breeders' Association is clearly defined in its name. Besides this, however, there is another association, the Illinois Corn Growers' Association. This has been in existence longer, but not fully organized until January last. Its objects are: First, better methods in selecting and caring for seed corn; second, the improvement and development of varieties of seed corn; third, better methods of cultivation; fourth, to establish a standard of perfection, and to perfect a score card for use in judging exhibits of corn; fifth, to hold conventions for instruction in corn judging, and to issue certificates of qualification to expert judges of corn. This is a larger organization, with a membership of nearly two hundred, from all parts of the State. They reside in Morgan, in Sangamon, in Macon, in fact in a large majority of the counties of the State. They are mostly young men. Men with a prospect of long lives of usefulness in the better methods of corn culture; in the art of selection, in the knowledge of varieties, and in the ability to judge intelligently the good, the indifferent, and the bad in corn. Some of them have passed examinations in corn judging, and have proven so expert, that they have been given certificates of expert judges of corn, and are believed to be competent to judge corn exhibitions, whenever and wherever their services are needed. They can not fail to encourage better methods in their various communities, and thus benefit their neighbors and the State, without cost to the State, for this organization is not supported by a Legislative appropriation; neither does its officials receive any compensation for their services. If it has ever been under a cloud, we believe a clear sky greets it now; and a bright future is its sure reward.

There are other obstacles in the way of the higher production of corn than the fact that its pedigree is bad. It is a large consumer of plant food. The removal of fifty-four bushels of corn from an acre of land means the removal of one-half of the entire growth for that year or one and one-half tons. Add another ton for cobs and stalks wasted or burned. Two and one-half tons of dry material taken from one acre annually is a heavy draft, greater than by most other farm crops. This causes the corn growers to think, and think hard, upon the question of retaining the soil fertility. To aggravate the question more, much of our farm land is in the hands of a worthy class of people, viz.: the tenant farmer, who usually pays a high rent and by force of circumstances can grow but little that is not marketed in a wagon box. He is more familiar with the matter of rotation of tenants, than with the rotation of crops. He is prompted to get all the corn he can out of the farm this year for he may not be in position to suffer the consequences next. He is usually not a wealthy man, and without the encouragement of the land owner can not do much to preserve conditions of the soil, that will produce a profitable corn crop. With a little disposition on the part of the land owner to provide in their leases for soil preservation, with more than half our farms now under lease, and with a rapid increase of tenancy, there is reason to fear that Illinois shall not long hold the position among states, as first in corn production. The only hope is more light, more knowledge of soil conditions. The ten thousand dollars asked by the University of Illinois for investigation in soils of the State, is as a drop in the bucket in comparison with the possible fact that our corn growers shall recede from the three hundred million bushel corn mark they now hold, which information with a liberal appropriation, the State is now abundantly able to give through its agricultural college and experiment station.

Whatever of investigation in conditions of agriculture, that have been done by the Experiment Station, have not been done at State expense, but because of the Hatch and Morrell appropriation of the United States Congress, and if we could spend a little of our own money in investigation of soil conditions we might appreciate its teachings more, (even if it were possible to do the work without), than if we received the funds by way of a tax on imported goods. At all events our corn growing farmers must know the effect this broad acreage has upon the stored fertility, and must be taught that with better soil methods, the acreage may be reduced one-third without reducing the annual yield; that corn as now managed is a robber, a soil robber, and ere long, possibly the next generation of men will discover that they have not inherited that that justly belonged to them—a fertile soil.

Illinois is getting more money today for its corn than any other similar territory in the world. More is expected of her Experiment Station, by the world, than of any other station, in scientific knowledge of her greatest production. Unknown factors in the problem of corn culture must be brought out. These problems, when solved, must be sent out to every corn grower in the land. They must be transmitted to a thousand students in agriculture, instead of one hundred and fifty seven, as now. To one thousand earnest thinkers in the corn school, and in judging, instead of one hundred and fifty last month. The knowledge of the foundations of our great agricultural resources must be disseminated until it shall no longer be popular to keep up the mad rush to the towns and cities, where are now more people than can find employment; more than can keep the wolf from the door, untill it shall be "just the thing" to stay on the farm, where there is always plenty and to spare, and where there is vastly more to do, than the people now on the farm can do well. There are no new fields for corn in the United States. Its territory is restricted by temperature and rain fall. There is little need now for extending its market, or encouraging its increased consumption. The present high price of corn lands could not have been established, if it were possible to "go west" and find them. These prices are not too high to grow corn upon, on the basis of the present market. They will not sell lower, until their productive value is diminished, unless the price of money is increased. They will sell higher if their ability to produce is permanently increased. When the small acreage of the State not yet brought into cultivation, shall have been reclaimed; when character has been given to our seed corn, by a line of pure breeding; when each farmer's son and daughter is so familiar with the nomenclature of corn, that he or she may have in their possession a certificate of ability to judge corn; when the reasons for the best systems of cultivation and the theories of plant growth are taught in the common schools; when the methods of feeding or marketing are freely discussed in the farmer's institute; when it shall be fully realized, that on an intelligently managed farm, is the best place on earth for a home; when science backed with liberal funds has unlocked the unknown in soil, and in plant development, then shall the farmer man and the city man rejoice together, over abundant harvests, and every citizen feel proud of our own prosperous Illinois.

INSECTS INJURIOUS TO CORN.

By Professor S. A. Forbes, Urbana, Ill.

The subject assigned me on your program is much too large to be covered by a single address. Indeed I have lately given a course of three lectures upon it to a convention of corn growers without finishing the topic. I have consequently chosen for this occasion a single group of corn insects associated in producing a noticeable and important injury to young corn, an injury by retarding the growth of the plant gives the field an uneven appearance, patches of varying sizes remaining small and feeble while the corn around them grows strong and rapidly. This spotted and uneven appearance of young corn, continuing often until the field has generally tasseled, is not all due to insects, some of it being of course consequent upon differences of soil and moisture easily recognizable by the observer, and a few being due also to a bacterial disease of the roots and the lower part of the stalk. In by far the greater number of cases, however, not attributable to differences of soil and other physical conditions, this noticeable irregularity and unevenness of development are due to one or more of a small group of insects which infest the roots of the plant, either devouring their substance or sucking out their sap. Some of them also destroy the kernel, before or after it has sprouted, and some may burrow or pierce the underground part of the stalk. These are mainly the corn root worms, the corn root aphids, the wire worms, the white grubs, and an insect only known as an enemy to corn within the last few months, to which we shall have to give the name of the *Colaspis* root-worm.

In discussing some of these insects with you, I shall further select from the mass of facts known about them and about their work, those things not known to all of us, but which it seems to me, nevertheless, that every corn grower should know, but especially those on which our information is as yet incomplete, and on which, consequently, the observant farmer may easily help us to clues to new knowledge by reporting to my office facts and conditions as they come to his attention.

Before beginning a detailed account of the insects selected, a few general remarks will be necessary as a means of avoiding needless repetition.

In the first place I wish to say once for all that there are almost no remedies for insect injuries to corn. This statement will, however, be misunderstood unless we distinguish between remedies and preventives in economic entomology. By the first I mean measures taken after an injury has begun, to arrest its further progress and to restore the crop; while preventive measures are things done in anticipation of insect attack, with a view to preventing it or to arresting it before injury has been done. As you will see presently, preventives are often easily applied, and amount in many cases to nothing more than a variation in the agricultural routine, often indeed to nothing more than the use of correct agricultural methods. It is on this account, however, that we need especially to know the leading facts concerning the insect injuries to which the corn crop is liable, as otherwise no intelligent measures of prevention can be taken by the corn grower.

Permit me also to call your attention to one or two general facts concerning insects themselves, especially concerning their mouth parts, as determining the kind of food they take and the method of taking it, and also concerning their transformations—that is the successive stages through which they pass in their growth and development.

With respect to their mouth parts insects may be divided for our purpose into the two simple groups of sucking and biting insects, the former provided with a proboscis or beak, which is sunk into the tissues of the plant, making a mere prick upon the surface, and through which a fluid food is drawn—that is the sap of the growing plant. The biting insects, on the other hand, have jaws by which the tissues of the plant are bitten away and eaten up. The effect of these two kinds of injury is of course often very different. The effect of the abstraction of the sap by the sucking insects very closely resembles that of drouth, especially where the root is the part infested. In many cases drouth and this kind of insect injury coincide in such a way as to make it impossible to distinguish one from the other. The effect is thus general, diminishing the vigor of the entire plant without interfering with the performance of the functions of any particular part. The biting insects, on the other hand, injuring and perhaps destroying the structures which they infest, may injure the plant more seriously, because more by depriving it permanently of indispensable organs. The corn root aphid and the corn root worm, both presently to be described, are examples of this difference; both infest the roots, the former sucking the sap from them and the latter killing them by eating out their inner substance.

With respect to the transformations of insects it is important to notice for our purpose that some of them go through stages of development so widely unlike each other that without breeding them one from the other no one would suspect them to be different states of the same insect species; while others change comparatively little in the course of their development, the young strongly resembling the adult except in the fact that the latter usually have wings. Again the corn root aphid and the corn root worm will illustrate the distinction, the latter being the grub of a beetle to which it bears no noticeable resemblance whatever, while the corn root aphid when hatched from the egg is very much like the full grown insect.

THE COLAPSIS ROOT WORM. (*Colapsis brunnea* Fabr.)

The first species to which I have to ask your attention is one particularly interesting to me just now through the fact that its injury to corn is a recent discovery, not yet formally published, indeed, and of which this is the first

general statement. It serves also to emphasize the point I made a few minutes ago, that we greatly need the intelligent aid of farmers in securing clues to the essential facts concerning economic insects. Our knowledge of this very insect as a corn pest is due to an inquiry made late in June, 1900, by a farmer near Griggsville, in Pike county, concerning an injury to his corn which he did not understand and which did not correspond exactly to anything with which I was acquainted. Two successive visits by one of my assistants, instructed to make a careful study of infested corn fields in that region and to extend his observations into another district also, gave us the facts which I have to report today.

From his report it appeared that fields infested by this *colapsis* had a very uneven growth, the corn ranging from five or six inches in height in the infested spots to a foot and a half or two feet high where the roots were uninjured. Among the roots of the injured plants a short, thick, fleshy grub, an eighth of an inch in length, was found, shown on the accompanying chart. The only other insects with which it might be confused are young white grubs just hatched from the egg. It is, however, thicker and shorter than these, and may be distinguished from them at a glance by the fact that the root worms have the segment of the body immediately behind the head—the one bearing the first pair of legs—smooth and leathery, the rest of the body being soft and wrinkled, while in the common white grubs the segment immediately behind the head is soft and wrinkled like the others. The nature of the injury done to the roots also serves to distinguish this insect. It does not eat them away like the white grubs or bury itself within them like the root worms, but kills them by eating in from the outside or gnawing away the outer layers. At the time of these visits, that is the last week in June, this insect was found in the corn in three of its stages: root worms of various ages, *pupa*, and freshly formed adults. A few of the latter were also noticed feeding on vegetation outside the field. I had previously known this root worm as a strawberry insect mainly, having published an article on it many years ago, in fact, as one of the strawberry root worms, and at that time its life history was very well known, except that we never yet have seen the eggs. Other facts concerning it go to show, however, that the eggs must be laid in summer and fall, the beetles resulting being most abundant in our collections in July and August. The winter seems to be passed in the egg stage, but at any rate the young larvæ begin their injury to corn quite early in May. I have taken them about half grown by the middle of that month, and have found them, as a rule, practically all changed from this active and destructive stage into the dormant *pupa* by the first week in July. From this it follows that notwithstanding the injury which may be done early in the season, the corn plant has an opportunity to rally and recover lost ground if the summer is favorable to its rapid growth. The beetle has a good power of flight, and feeds freely upon a great variety of plants. To economic entomology it was first known, in fact, as an insect injurious to the grape, feeding upon the leaves in summer, and among its other food plants are strawberry, beans, buckwheat, corn silk, clover blossoms, and the blossoms of the willow. Additional search in the vicinity of the injured fields near Griggsville disclosed this root worm in fields both of timothy and clover, where it was feeding upon the roots of both these plants. In only one case was it found in corn on old corn land. In all other instances the injured corn was growing on ground in grass or clover the preceding year. In the neighborhood visited its injuries were confined almost strictly to hilly land where the soil was relatively light.

Until we know the full details of its habits and life history I can make no definite recommendation with regard to the prevention of its injury, and for the opportunity to make the necessary additional observations I shall have to depend on reports and inquiries from those noticing its injuries to their corn.

[The remainder of this extemporaneous address was devoted to the Corn Root Aphis, and its attendant insect, a small brown ant well known to be associated with it; to the Wireworms; and to the White Grubs. The speaker has found it impracticable to write out this matter, having, in fact, spoken without notes. This omission is, however, of little consequence, since these

insects have already been fully treated from the farmer's standpoint by Professor Forbes in Bulletin 44 of the Agricultural Experiment Station, which can be had on application to Eugene Davenport, Director of the Experiment Station, Urbana, Ill.]

THE ELEMENTS OF FERTILITY TAKEN FROM THE SOIL BY A CROP OF CORN, AND HOW TO RESTORE THEM.

(By Cyril G. Hopkins, University of Illinois.)

Some time ago, while addressing a meeting of farmers in an Illinois town I was honored by the presence in the audience of several school teachers who had come to attend a teachers' institute in the same town. I spoke on some phase of scientific agriculture, and of course, I had to make use of some scientific terms, such as *carbohydrates*, *protein* and *nitrogenous* foods, terms with which every progressive farmer and stock raiser is familiar. Later in the day, while waiting for a train, I had the pleasure of attending the teachers' institute, and, incidentally, I had the benefit of hearing myself thoroughly criticised, while I meekly sat and listened quite unobserved. The high school superintendent of a neighboring town was speaking and he took occasion to inform his audience that, besides preparing his own address that morning, he had visited the farmers' institute and had heard a part of the address given by the gentleman from the University; but he stated that he was unable to make head or tale out of my address and that he considered it was altogether too technical.

Instead of feeling hurt, I was much amused, because I knew that after my address had been given and the teachers had gone out, the farmers had taken up the discussion of the subject and they had actually used about as many technical terms as I had, and, not only that, but they seemed to understand what they were talking about; and so I said to myself that the farmers and stockmen were just as guilty in using technical terms as I was.

Since that time I have come to understand what technical terms really are: Technical terms are the terms which apply to the other fellow's business and which we don't understand. When the stockfeeder speaks about the need of nitrogenous foodstuffs, rich in protein, for the production of flesh in the animal, casein in milk, or albumen in eggs, or of the use of carbohydrates for energy, and fat production, then many school teachers are ready to hold up their hands and cry: "technical." And when the high school teacher talks about the use of dative of indirect object with most Latin verbs compounded with *ad*, *ante*, *con*, *in*, *inter*, *ob*, *post*, *pre*, *pro*, *sub* and *super* and sometimes *circum*, then he is getting rather technical for most farmers.

In order that no one may have any difficulty in following the discussion, I shall take the liberty of introducing my subject with some explanations, although I realize that I shall only use terms with which many of you are very familiar—but one never knows—there may be high school teachers present!

For any one who only knows Latin and Greek, or algebra and geometry and trigonometry, or grammar and rhetoric and elocution, or history and sociology and political economy,—for such a one the subject of soil fertility is indeed a technical branch of that most complicated and technical subject which is called agriculture.

But the study of soil fertility is not difficult to comprehend. It is, in fact, easy to understand, because it deals with the fundamental or basic principles of matter. By the elements of soil fertility is meant some of the primary or original substances in nature. An element is a simple, single, primary substance, and it can not be divided into two different substances. When, in our study of nature, we reach an element of fertility, we arrive at the very bottom of material things. We can not go beyond the element. It is the unit of matter, and as far as the human eye can see it is the last, the final, the ultimate. We can study into nature until we reach the element, but we can go no farther. We can ask what it is or why it is, but the only answer is, it is because it is.

And because of this fact that the elements constitute the basis and the beginning of all substances, it seems logical and fitting that we begin with the elements in a study which has to do with the elements of fertility, the elements of plant food. Because we can begin with the elements, at the very bottom of the subject, the study of soil fertility becomes simple. There is no mystery about it, and there should be no vagueness concerning the subject in the minds of the men whose business is utterly dependent upon the elements of fertility.

Thirteen different primary elements constitute the food of plants. The entire corn plant, including the roots, stalk, leaves, tassels, husks, cob, and kernels, is composed of these thirteen simple, individual elements, united in various ways and in many compounds. Three of the thirteen elements of plant food are derived from the air, and these three elements constitute more than 94 per cent of the entire corn plant and 97 per cent of the grain or kernels. These three elements are carbon, hydrogen and oxygen. The element carbon is contained in the air in the form of a gas-compound called carbon dioxid which is everywhere present in pure air to the extent of four parts in 10,000. The supply of the element carbon never fails as food for plants. Hydrogen and oxygen are furnished to the plant mainly in the form of the compound of those two elements which we call water, and thus the supply of hydrogen and oxygen fails only when the rain fails.

As already stated, these three elements, carbon, hydrogen and oxygen, make up more than 94 per cent of the entire corn plant. The remaining part, less than six per cent, is composed of the ten elements of plant food which must be supplied by the soil, and which constitute the elements of soil fertility. Seven of the ten elements furnished by the soil are present in all soils in such large amounts and are used by the plant in such small amounts that the supply is rarely, if ever, exhausted. These seven elements are: Iron and sulphur, sodium and chlorin, silicon and magnesium and calcium. The total quantity of these seven elements in corn is very small, and it is not probable that any of them are deficient in Illinois soils from the standpoint of plant food, though some of them are frequently of value in improving the physical conditions of the soil.

But the remaining three elements of soil fertility, nitrogen, phosphorus and potassium are required by the plant in considerable quantities and they are present in ordinary soils in small amounts and, consequently, they are liable to be exhausted from the soil, or reduced to such an extent that plants are not able to obtain a sufficient supply for proper growth and development.

The following table is given to show the relative amounts of the different elements in corn. The results are given in percentages, or in pounds of the elements found in 100 pounds of shelled corn:

THE ELEMENTS IN CORN.

Carbon.....	39.000	97.40
Hydrogen.....	6.400	
Oxygen.....	52.000	
Nitrogen.....	1.750	1.75
Phosphorus.....	.294	.65
Potassium.....	.356	
Magnesium.....	.125	.20
Calcium.....	.022	
Silicon.....	.014	
Sodium.....	.013	
Chlorin.....	.013	
Iron.....	.008	
Sulphur.....	.005	

Unfortunately the system of naming the constituents of plant food which has come into common usage is not so simple as I have outlined. Thus, instead of using the names of the elements nitrogen, phosphorus and potassium, people talk of ammonia, phosphoric acid and potash,—compounds which, as such, are neither contained in the plant nor in plant food, although they do contain the elements nitrogen, phosphorus, and potassium respectively. But the plant contains the elements and requires that the elements be furnished in plant food. If a plant needs nitrogen it can be supplied in many different compounds, as sodium nitrate, potassium nitrate, ammonium sulfate, or even in organic forms, as dried blood, dried meat powder, cotton seed meal, barnyard manure or green fertilizers, in fact in any one of a dozen different compounds or forms. Any substance which contains the element nitrogen in suitable condition for use as plant food can be utilized for that purpose; and the same may be said of the elements phosphorus and potassium; and the thing for us to keep in mind is that plants must have the elements of fertility, elements of plant food. It is not the ammonia, or the sodium nitrate, or the dried blood which the plant needs, but the element nitrogen which is contained in those different substances in available form; and it is not the phosphoric acid, or phosphoric acid, or phosphate, or superphosphate, or bone meal, but the available phosphorus, the real element of fertility, which has a value to the plant; and it is the element potassium which gives a fertility value to wood ashes, kamit, potash, and all potassium salts.

The amounts of the different elements of fertility taken from the soil by a crop of corn, or by any other crop, will depend of course upon the yield. As you are aware, a good ear of corn weighs one pound; 70 good ears weigh 70 pounds; 70 pounds of ear corn make one bushel. An acre of corn contains 3,556 hills; only two ears in each hill make 7,112 ears; 7,112 good ears of corn weigh 7,112 pounds; 7,112 pounds of ear corn make 102 bushels.

While it is true that 102 bushels to the acre is about three times the average yield of corn in Illinois, yet these are the computations which have been made and the mark which has been set up by a good many corn growers in this State; and, by means of good seed and good land, and good farming, some of them have reached that mark; and in the following table I give first the fertility removed from the soil by a crop of 100 bushels of corn, the fertility being expressed in the usual forms of nitrogen, phosphoric oxid and potash:

FERTILITY IN CROPS.

(Pounds per acre.)

Crop.	Yield.	Nitrogen.	Phos. Oxid.	Potash.	VALUE.	
					Nitrogen.	Minerals.
Corn.....	100	140	53	57	\$21 00	\$5 50
(Grain).....	100	100	40	23	15 00	3 15
Corn.....	60	84	32	34	12 60	3 30
(Grain).....	60	60	24	14	9 00	1 90
Oats.....	60	60	22	50	9 00	3 60
(Grain).....	60	38	15	11	5 70	1 30
Wheat.....	30	62	20	26	9 30	2 30
(Grain).....	30	40	14	9	6 00	1 15
Potatoes.....	200	23	20	62	4 95	4 10
(Tubers).....	200	25	9	60	3 75	3 45
Sugar Beets..	600	110	46	190	16 50	11 50
(Roots).....	600	90	36	180	13 50	10 90

The data are also given for 60 bushels of corn per acre, and for several other common crops for comparison.

These are the amounts of fertility actually contained in the crops which are taken from the land, but we should understand that there are other ways by which the element of fertility may be removed from the soil. Only small amounts of the elements of fertility contained in the soil are soluble and readily available as plant food. This is also true of farmyard manure which

is added to and worked into the soil. You are well aware, that for several years after being added to the soil, farmyard manure continues to become available as plant food. When we plant our corn in the spring there is certainly not enough soluble plant food in the soil to mature the crop, but by the combined action of various agencies, such as heat, moisture, air, carbon, dioxid, bacteria and the products of decaying vegetation, the plant food gradually becomes soluble about as fast as the growing plant can use it. An important thing to keep in mind is, that the process of making plant food soluble is continually going on in the soil. It matters not whether a crop is growing on the soil or not, this action is going on. Plant food is being made soluble, and if there is no growing crop to use this food, it collects in the soil and is in constant danger of being lost. The first heavy rain is sure to carry much of it deep into the sub-soil, and continued rain will certainly carry it away into drainage water.

Determinations of Laws and Gilbert which have now been carried on for twenty years show that the average yearly loss of soluble nitrogen in drainage water from a bare soil to which no manure or fertilizer has been added nearly 35 pounds per acre, as much nitrogen as is contained in 35 bushels of corn. That a growing crop will use this plant food about as fast as it becomes soluble is well illustrated in the amount of nitrogen which has been found in drainage water during the season. The drainage water from a field of wheat has been found to contain the following amounts of nitrogen per million parts of water:

Date.	Nitrogen.	Date.	Nitrogen.
April 7.....	29	August 3.....	4
April 13.....	34	August 30.....	8
May 29.....	16	September 25.....	11
June 3.....	8	October 14.....	13
July 1.....	9	October 23.....	20

Experiments at the Minnesota Experiment Station have shown that, in exclusive wheat farming, from four to six times as much nitrogen is lost as is actually used in producing the crop. One acre of land lost 171 pounds of nitrogen and only 25 pounds of the total amount were taken off in the crop.

I was asked by your worthy Secretary to address you upon the subject: "The Elements of Fertility taken from the Soil by a Crop of Corn and How to Restore Them," but from the date I have given you, you will observe that the problem of stopping the dead loss of even larger amounts of fertility than are required by the crop may be of still greater importance. A practical method for stopping some of this loss is suggested by a study of the soluble nitrogen contained in the sub-soil under different crops with their different root systems. The following table shows the number of pounds per acre of soluble nitrogen which have been found in the soil down to a depth of nine feet, both under a shallow rooting crop and under a deep rooting crop.

SOLUBLE NITROGEN IN SOIL.
(Pounds per Acre.)

	Under White Clover.	Under Alfalfa.
Top, 18 inches.....	12.88	9.99
18 inches to 3 feet.....	2.76	1.59
3 feet to 4½ feet.....	18.39	1.92
4½ feet to 6 feet.....	25.77	1.38
6 feet to 7½ feet.....	21.89	1.31
7½ feet to 9 feet.....	21.04	.85
Total, 3 feet to 9 feet.....	87.09	5.46

These figures show that the alfalfa has the power to take up practically all of the soluble nitrogen to a depth of at least 9 feet. Alfalfa roots were traced to this depth at Rothamsted where these experiments were performed. Red clover is also a very deep-rooting crop. On the other hand, the shallow-rooting white clover seems to have little, if any power to draw upon the food supply from below three feet, although in the next six feet of earth there were found 87 pounds of soluble nitrogen per acre, as much nitrogen, let us observe, as is contained in 87 bushels of corn, and the rapidity with which this nitrogen is lost is measured by the flow of drainage water.

To prevent loss of plant food in drainage waters we must keep the soil covered with a crop as much as possible, and the more extensive the root system the better. The sowing of rape and cow peas in the corn after it is laid by is a practice which provides for a late fall growth, and not only tends to lessen loss of fertility, but furnishes excellent fall pasture, and in the case of the legume helps to restore the nitrogen which the corn crop used, by gathering from the free supply of the air, a property which is now generally recognized as belonging to all leguminous plants, as the peas, beans, clovers, netches, etc. Experiments have fully demonstrated that by a sufficient use of these leguminous crops in rotations the supply of nitrogen may be not only maintained but increased, although considerable amounts are removed in the grain crops.

The question how not to restore fertility is well answered by the results of some experiments in Ohio upon the use of commercial fertilizers on land so poor that all three of the valuable elements of fertility had to be added to produce a good crop. Actual trials showed that:

\$6.37 worth of nitrogen, phosphorus and potassium produced \$4.36 worth of corn.

\$9.25 worth of nitrogen, phosphorus and potassium produced \$6.76 worth of corn.

\$12.74 worth of nitrogen, phosphorus and potassium produced \$8.53 worth of corn.

\$14.25 worth of nitrogen, phosphorus and potassium produced \$8.82 worth of corn.

In every case the results show a loss of about one-third of the money paid for the fertilizing materials. I may add that trials with wheat and with oats showed similar results, a marked financial loss appearing in every case where the crops were grown on land so poor that all three of these elements had to be added. In no case, however, was the total loss equal to the cost of the nitrogen fertilizer, showing that if the supply of nitrogen can be maintained by the use of leguminous crops, as it certainly can be, the mineral elements, phosphorus and potassium can be purchased in the form of commercial fertilizers and sometimes at a profit under existing prices.

As nitrogen can be recovered from the air by means of leguminous crops, we may even plan to sell products from the farm which contain nitrogen; but it behooves us to guard well the stock of the mineral elements if we do not wish to join the army of farmers in the older sections of our country who are now paying forty million dollars annually for commercial fertilizers which they are compelled to buy in order to make their worn-out lands produce crops.

Computations show that an exclusive system of grain farming in which everything produced is sold from the farm, takes from 160 acres about 1,400 pounds of phosphorus and 4,800 pounds of potassium each year, while under a system of stock and dairy farming an actual loss of only 350 pounds of phosphorus and 500 pounds of potassium would occur. In other words, the mineral elements would last from four to ten times as long under a system of stock farming as under the worst system of grain farming. If the stock farmer not only feeds his own crops but buys considerable amounts of feed and adds the fertility produced from that feed also to his land, then there need be no loss whatever in the store of any of the elements of fertility in his soil.

But any system of farming which continually removes fertility from the soil and sells it from the farm, and continually fails to restore an equal amount to the soil, will as surely reach the limit and the end of the supply of soil fertility, as one is to go over Niagara Falls if he lets his boat drift down the river from Buffalo. As agriculture is the basis of the support of the nation, so the basis for the support of agriculture is soil fertility. But there are men in Illinois who already realize this fact. Soil problems are confronting them, and I know that farmers are studying or trying to study these problems. Perhaps I realize this more than many of you, because we are constantly receiving letters and being visited by men from different sections of the State asking for information and for help to solve these soil difficulties. Men tell us they have land that won't produce crops; some lands that were once rich have gradually failed; other lands that once produced large crops have suddenly become unproductive; and still other lands that do not and never have produced good crops; some lands where corn grows rank and promises 100 bushels per acre and then husks out fifteen or twenty; other lands that produce oats but won't grow corn; some lands are thought to be alkaline, others are acid. But I need not go over these problems. There are men enough in this audience who are familiar with every difficulty I have mentioned. You are as familiar with the difficulties as I am; what you want to know are the remedies for these difficulties. And this I realize, too, for we are constantly reminded by dozens of letters that more information and exact knowledge is wanted and it is wanted immediately, wanted for use before seeding time. And I realize it, too, because by working ten hours a day and six days in the week, and sometimes nights and Sundays, with our present equipment and apparatus and help we could not do one-fourth of the work we are asked to do and that ought to be done, and at the present moment soil samples received weeks and months ago are not yet analyzed.

Sometimes the cause of difficulties with the soils is easy to locate, and sometimes a thorough investigation is required which may be expensive and time consuming. The following table showing the analyses of some Illinois soils will illustrate some difficulties:

FERTILITY IN SOILS.

	Fertile soil.	Old wheat land.	Peat bog soil.
Insoluble matter.....	72.30	92.92	11.74
Organic matter.....	10.90	2.59	76.18
Nitrogen.....	.88	.07	3.37
Phosphoric oxid.....	.35	.03	.24
Potash.....	.45	.21	.07

The wheat land soil is from St. Clair county and has grown good crops of wheat almost continually for half a century, until both the nitrogen and the phosphorus are nearly exhausted, and the land now refuses to yield a profitable crop.

The peat bog soil is representative of a large tract of land in Mason and adjoining counties near the Illinois river. It is found to require only the addition of the element potassium to change it in some places from an almost barren soil to one of high productive capacity.

To redeem the old wheat land will require the liberal use of farm manure or leguminous green fertilizers or both, and the direct application of phosphorus in the form of commercial fertilizers.

Two methods are employed for the investigation of soils, and for a complete investigation both methods should be used, the one to supplement the other. First is the complete chemical and physical analysis of the soil. This shows the total resources of the soil in plant food and indicates what system of farming should be adopted, what crops should be grown, and what fertilizers, if any, must be added to increase and to maintain the productive capacity of the soil for years to come.

Second is the direct test of the soil as to its immediate need of the different elements of fertility in order that the largest possible crop may be produced the next season. Much valuable information may be obtained by making such tests. Soil tests with fertilizers may be made in pots and under full control in glass houses, or they may also be made on small plots in the field. The following plan is given for making soil tests or experiments in the field by means of the different elements of fertility in commercial fertilizers.

An acre of ground is selected which is fairly representative of the field and it is laid off in ten plots of one-tenth acre each. Plots two rods wide by eight rods long are a good shape. To these plots the different fertilizers are applied according to the following plan and then the same kind of crop, as corn, for example, is grown on the whole acre.

SOIL EXPERIMENTS WITH FERTILIZERS.

($\frac{1}{10}$ acre plots.)

Plot 1—Check. No fertilizer.

Plot 2—16 lbs. Sodium nitrate.

Plot 3—32 lbs. Superphosphate.

Plot 4—16 lbs. Potassium chlorid.

Plot 5—Check. No fertilizer.

Plot 6—16 lbs. Sodium nitrate; 32 lbs. Superphosphate.

Plot 7—16 lbs. Sodium nitrate; 16 lbs. Potassium chlorid.

Plot 8—32 lbs. Superphosphate; 16 lbs. Potassium chlorid.

Plot 9—16 lbs. Sodium nitrate; 32 lbs. Superphosphate; 16 lbs. Potassium chlorid.

Plot 10—Check. No fertilizer.

This plan provides for a complete test of the soil as to its immediate needs for the chief elements of fertility, nitrogen, phosphorus and potassium. First, for each individual element; second, for each combination of two elements and third for all three elements together—besides the three check, or control, plots. If it is desired to do less work than is here outlined, only the first five plots may be used. If still more work can be undertaken, another acre should be selected and first given a dressing of 2,000 pounds of air-slacked lime, then laid off in $\frac{1}{10}$ th acre plots, and the above plan of experiments duplicated.

To any who desire to make such soil tests, the writer will be pleased to render any further assistance possible in arranging the details of such experiments, and will also hope to receive a full report of the results obtained upon each separate plot.

CYRIL G. HOPKINS,
University of Illinois, Urbana, Ill.

WEDNESDAY AFTERNOON, FEBRUARY 20, 1901.

The session was opened by a solo from Miss Lillian Batz, who played the Rigoletto Fantasie by Liszt.

Miss Jessie Wilcox followed by singing "Lullaby" by Hanscom; "The Quest" by Smith, followed by "Love is a Bubble" by Francis Alliston. Miss Shanafelt accomanied Miss Wilcox and Prof. W. A. Hoblit supplied the violin obligato. All are connected with the Illinois College of Music.

In place of the president's annual address, ommitted on account of illness, Mr. L. N. Beal, vice-president of the institute, spoke as follows:

The annual meeting of the State Farmers' Institute is a grand rally, the round-up of the past year's campaign of institute work, and is a pleasant and profitable meeting to many Illinois farmers. To the thousands who have never

attended one of our annual meetings I would say that they miss a grand opportunity of obtaining inspiration for better work and an opportunity of making acquaintances that is worth much socially and may have a financial value to many of us in days to come. For we meet to discuss questions of importance to us as farmers, and we reach correct conclusions in our deliberations and in every way increase our ability to prosper. Every class of citizens is also benefited thereby in a very direct manner. For whatever is done to increase the prosperity of the farmer increases the prosperity of every class that has service to sell. If the condition of agriculture is not as satisfactory today as we would like to have it, I can at least congratulate you upon being engaged in farming in one of the best states in the Union. Best not only in soil and climate but also in respect to the character and temper of its people.

Illinois is full of intelligent men and women on the farm as well as in the village and city.

When the State Farmers' Institute was first organized, only thirty-two (32) counties held meetings. Now there are no counties in the State that do not hold institutes. Many counties hold two or more each year.

How much good the institute does and can do, we all know. That much good has been done is not denied by any one, and year after year, as we learn more, we are improving on the former methods and getting more and more good from the institute work.

It is not the only purpose of institutes to teach how to raise bigger crops, better horses, fatter hogs, but to make better men and women, better boys and girls of our rural citizenship. As our city population is made up largely of immigrants from the country, the improvements of the farmer benefits the entire body politic. The farm has furnished the material out of which has come the most eminent men and women of every art and profession. From our country homes must come the strength and promise of the nation.

We may talk of our crops, of our flocks and herds, they are important subjects, but the great object of institutes is the quickening of brain development, mental culture and moral worth among the people.

Members of the State Farmers' Institute, there are two things that should constantly be kept in mind. The first is the improvement of the agriculture and horticulture of the State. The second is the elevation intellectually, socially and morally of the whole agricultural people. This State Institute stands for the best science, the best theory, the best thought and the best practice for the farm, the dairy, the garden, the orchard and the vineyard. It is one of the strongest and grandest organizations in the State, a center of light and influence.

We need to mingle more thought and more study with our work, because the more a man knows, the more he can do; the more deeply and clearly he can think, the more economically and advantageously he can work. Some men think until the brain becomes feverish and overworked; others labor with the hands until the body becomes bent and prematurely aged. This is all wrong. The thinker and the worker should be one. This is particularly true of those engaged in the arts of agriculture and horticulture. Science has made farming and gardening intellectual pursuits. You recognized this when you established the free scholarships in agriculture in the University of Illinois.

Chemistry, Botany, Geology, Entomology and other sciences have done much for the farmers and gardeners art. They will do more. We may not all agree that there is a science of agriculture, but we do all agree that there is an intimate and helpful relation between general science and the farmers' calling. We are fully satisfied in regard to the signal value and importance of scientific research. It explains, simplifies and verifies the practical operations of the farm. If scientific research is important, a knowledge of the results of such research is equally important. This is one of the objects of this State Institute. Scientific students and specialists will tell us something that we need to know. Men who have mastered the arts of agriculture and horticulture will tell us what they have learned by practice and

experience. Science and art, theory and practice, will go hand in hand and the joint work of these can not fail to result in substantial progress. I trust each one present will do their part toward making it what it might and should become.

The Chairman:—The secretary having received the following letter from Secretary of Agriculture, the Hon. James Wilson, made arrangements with Prof. W. M. Beardshear, president of the Iowa College of Agriculture, to be present and address us today.

FEBRUARY 13, 1901.

Mr. A. B. Hostetter, Secretary Farmers' Institute, Springfield, Illinois.

DEAR SIR:—I have your letter of the 11th instant. I regret very much that you have advertised me for the 20th in Illinois. I must stay here and attend to the appropriation bill for the Department of Agriculture in its movement through the two Houses of Congress and the Conference Committee. Otherwise the department will suffer seriously. I would enjoy very much going out to Illinois, because I peculiarly enjoy meeting the western people among whom I have lived so long. But this department is growing rapidly, its work is extending into all the avenues of productive industry, and we are asking money all along the line in increased amount, which we certainly will not get unless I am present to answer questions from members of the committees of both Houses and from members of both Houses not on the committees. We are also endeavoring to have our divisions grouped into bureaus in order to facilitate our work. These are the reasons why it was not possible to promise definitely to go to your meeting. I will look through the department, however, and see if I can find somebody who can spare the time to go and help you out.

Very truly yours,

JAMES WILSON,
Secretary.

W. M. Beardshear:—The following is an abbreviated statement of parts of the address by President W. M. Beardshear, of the Iowa State College of Agriculture and Mechanic Arts:

Gentlemen and farmers of Illinois:—Illinois and Iowa have great interests in common; the prairies, the soil, the products, and intermingled peoples of common kith and kin. I bring across the great river many tokens of fraternal feeling felt for you by the people of our great State. One of the farmer's discouragements is the fact that in history, education has come to the farmer and mechanic last; but not least. History has been a record of war rather than of the conquests of peace which have been many and grand. In the future instead of histories of battles we shall have treatises telling us more of what has been done by the inventor, the workman and the master of scientific and industrial arts. It has been well said that the farmer of the future will live more by his head than by his hands. With proper education the farm will be far more more profitable and enjoyable in the future. American farmers feed over forty million peoples who do not live on farms. The farmer needs the foreign markets for surplus products and should secure them by honest goods and the production of the best of everything. This means lots of hard thinking as directive of right doing and executing.

The man who would succeed must have a good education, a cultivated mind and a skill to use himself and useful implements. In our country credit is due financiers, architects, inventors and others who have aided in the improvement of the race. We are indebted to the men who have written good books and to the men who have in all callings developed the resources of the land and made things more profitable to the people in general. But marked honor must now be given to the men who have an intimate knowledge of nature's laws. By these laws they have produced the marvels in evolution from the primitive Indian corn to the magnificent products of today; from the wild useless crab-apple to the delectable fruits of the orchards on your prairies; from the wild scrawny grasses to the clovers, timothies and other like useful

growths of the hour. Illinois is wisely preparing for agricultural education and expansion. It is creditable that you have specialists in grasses, the cultivation of wheat and the breeding of special lines of stock. There is more gold and silver under these prairies than in the mines of the hills and the mountains. The young men and women who prepare themselves in head and hand for farming will be the choicest and most successful miners of this wealth. Brain growth is to be the great longing of the coming farmer. It is discreditable to have a well filled stomach and an empty brain. We should increase the attractions of our homes by tasteful, not necessarily expensive, buildings; we should fill these homes with good books and periodicals. These are within the reach of all today for reasonable sums. The best living in the world can be secured on a farm. Telephones and electric railways are traversing the country roads of Illinois. All kinds of improved apparatus are coming into use. Town and country are fast becoming one common possession and neighborhood. No where in all the world have I ever had such fare as on the old farm where we had the choicest of the best of earth and life. In this busy age, the wisest thing our country youth can do is to stick to the farm. Where one boy makes a mistake in not leaving the farm, ten make a mistake in leaving it. Use lots of home-made philosophy and hard common sense at the plow and in the home.

The Chairman:—Ladies and gentlemen, I have the honor to introduce to you the Honorable Aaron Jones, Master of the National Grange, who will talk to you a little while.

ADDRESS OF MR. AARON JONES, OF SOUTH BEND, INDIANA.

Mr. President, Ladies and Gentlemen:—I have not anticipated having anything to say today. I had come a day before I was placed on the program simply to get a hang of the house so I would not be entirely at sea. I have had the pleasure, in the past, of attending farmers' institutes in twenty different states of the Union, but this is the first time I have ever stood before an audience in Illinois on the occasion of a farmers' institute, and I do not know just exactly the range of that which is to be promulgated. I listened with a great deal of pleasure to the various remarks that were made today. They are along the line that elevates the American farmer. I believe implicitly in the line of thought of the gentleman from the agricultural college of Iowa. I believe that we have got to instill in the American farmer confidence in himself; that his profession is as good, as honorable as any profession that he can follow. The American farmer in the first place, has got to have confidence in himself and confidence in his business. He has got to be a thorough business man, and knowing his rights and the respective rights of the other classes with whom he comes in contact, he can go forward and meet them on a common plane.

There is a feeling that some other callings are more honorable than that of farming. The farmer should be a business man, capable and well trained. A man must have some means if he would succeed and have the respect of his fellow men, and he should make money as men do in other callings, and he can only do this by being a good business man. If you have a dull boy make a lawyer, a merchant, or even a manufacturer rather than a farmer. It is not the question, how much can a man produce on his farm, but how convert it into the most money? Make the boy satisfied with the conditions, not by talk, but by making the home attractive. Don't work the boys and girls to death. Of course there must be a diversity of labor, but there should be an equitable division of the profits of what the farm produces. Seventy per cent of the wealth is produced by the farmers; then why should we not distribute the profits in the same ratio? Since 1850 we have increased from \$3,750,000,000, when the farmers owned five-eighths of all, to over \$64,000,000,000, when the farmer had but a quarter who have produced the greater part of it. There must be an underlying cause for this. The distribution of wealth has not been equitable. Every farmer should carefully study this question. I do not mean to trench on any political matter; this is economic. The farmers supplied 73 per cent of the exports and have paid

most of the great war debt. Why, then, should we not have our fair share as well as the lawyer, merchant or manufacturer? The corporation lines of our great cities should be wiped out and every man be treated alike. Take the poor men and lift them up and make them feel they are the peers of the great money bags. Honesty, purity and industry should be the password to the best society. There is too much shrinking on the part of our poor people. The millionaire, be he what he may, has the entry into any society, but I would rather have the honest man, be he poor and upright. The legislator who will stand for the best interest of the farmer will rise highest.

OPERA HOUSE, JACKSONVILLE, ILL.,
WEDNESDAY, FEB. 20, 1901,
4:30 O'CLOCK, P. M.

The Convention of Delegates met as per call in the Institute program at the above named time and place.

The meeting was called to order by Vice-President L. N. Beal, A. B. Hostetter acting as Secretary.

Mr. John F. Galbraith, of Carbondale, presented the following report of the Committee on Credentials:

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the Eighth Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
D. H. Wheeler.....	Big Rock.....	Kane.....
H. T. Thompson.....	Marengo.....	McHenry.....
C. F. Dike.....	Nunda.....	.....
C. D. Bartlett.....	Bartlett.....	DuPage.....
K. T. Morgan.....	Wheaton.....	.....
H. C. Mead.....	West McHenry.....	McHenry.....
Mrs. Jennie Wheeler.....	Mazon.....	Grundy.....
William Reardon.....	Morris.....	.....

Respectfully submitted,

JOHN F. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING,

Committee.

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the Tenth Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
G. W. Furgeson.....	Orion.....	Henry.....
William Ringle.....	Osco.....	.....
H. H. Clay.....	Galesburg.....	Knox.....
H. M. Sisson.....	".....	".....
George W. Gale.....	".....	".....
Charles A. Wetherbee.....	Sterling.....	Whiteside.....

Respectfully submitted,

JOHN F. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING,

Committee.

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 12th Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
David Brumbach.....	Danforth	Iroquois.....
W. A. Hamilton.....	Wellington .....	.....
W. M. Bines	Ridge Farm	Vermilion
D. S. McMinistry.....	Kankakee	Kankakee

Respectfully submitted,

JOHN T. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING,
Committee.

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 14th Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
E. H. Diehl.....	Leeseburg.....	Fulton
Chas. E. Himmel	Bishop.....	Mason
G. G. Hopping	Havana.....	.....
Alfred Judd	Wenona	Marshall
W. B. Mills.....	McNabb	Putnam
Val Grag.....	Minier	Tazewell
Mrs. D. L. Harphan.....	Havana.....	Mason
Mrs. Bertha Graff.....	Minier	Tazewell
H. B. Rice.....	Lewistown	Fulton
Miss Eva Campbell.....	.....	.....

Respectfully submitted,

JOHN T. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING.
Committee.

To the Convention of Delegates of the Illinois Farmers' Institute.

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 16th Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
W. B. Connover.....	Virginia	Cass
Jno. G. Pratt.....	Carrollton	Greene
Donald Simpson.....	Jerseyville	Jersey
C. Nash.....	Bunker Hill	Macoupin
Jos. Chapell.....	Carlinville .....	.....
W. H. Stoddard.....	Barr .....	.....
H. G. Fansler.....	Pittsfield	Pike
W. A. Reed.....	Kane.....	Greene.....
H. J. Westlake.....	Jacksonville	Morgan
J. G. Pope.....	.....	.....
A. C. Rice.....	.....	.....
Jno. Cleary.....	Winchester .....	.....
Ralph Reynolds.....	.....	.....
W. R. Smithton.....	.....	.....
F. H. Allen.....	.....	.....

Respectfully submitted,

JOHN T. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING.

Committee.

To the Convention of Delegates of the Illinois Farmers' Institute.

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 18th Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
Rufus Cruthis.....	Sorento.....	Bond.....
E. P. Gracey.....	.....	.....
Geo. Himes.....	Vandalia.....	Fayette.....
S. J. Beer.....	St. Jacob.....	Madison.....
Eli Foucht.....	Mitchell.....	.....
L. A. Spies.....	Raymond.....	Montgomery.....
Frank Troeckler.....	Butler.....	.....
Edward Grimes.....	Farmersville.....	.....
Arthur Ware.....	Pana.....	Shelby.....
S. E. Simonson.....	Shelbyville.....	.....
A. H. McTaggart.....	Bethalto.....	Madison.....
W. E. Killian.....	.....	.....
J. S. Culp.....	.....	.....

Respectfully submitted,

JOHN T. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING.

Committee.

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 20th Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
M. M. Neal	Benton	Franklin
J. M. Vancil .....	.....	.....
Mrs. L. N. Beal	Mt. Vernon	Jefferson
J. Wat Ward .....	.....	.....
A. R. McDanniel	Jeffersonville	Wayne
Dr. Daniel Berry	Carmi	White
F. A. West	Bone Gap	Edwards
Miss L. C. Hall	Albion .....	.....

Respectfully submitted,

JOHN T. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING,

Committee.

To the Convention of Delegates of the Illinois Farmers' Institute:

We, your Committee on Credentials, beg leave to report that we have examined the credentials of the several delegates of the 22nd Congressional District, and find the following persons entitled to seats in this convention:

Delegates.	Address.	County.
John T. Galbraith	Carbondale	Jackson
T. W. Thompson .....	.....	.....
Mrs. H. G. Easterly .....	.....	.....
R. Byrd Leeper	Unionville	Massac
S. E. Vaughn	Golconda	Pope
A. H. Floyd .....	.....	.....
Samuel Clark .....	.....	.....
W. H. Leideigh	Villa Ridge	Pulaski
W. H. Reid	Marion	Williamson

Respectfully submitted,

JOHN F. GALBRAITH,
E. W. BURROUGHS,
W. B. MILLS,
H. D. HUGHES,
S. NOBLE KING,

Committee.

Mr. Coolidge, of Galesburg, moved that the report of the Committee on Credentials be accepted, and the parties whose names have been reported be declared members of this convention.

Motion adopted.

Mr. Hughes, of Antioch, moved that the list of delegates be given to the directors of the even numbered districts and that each even numbered district proceed to elect a director for the ensuing term.

Motion adopted.

The delegates from the even numbered districts assembled in groups, and after having elected their director for the ensuing term, made reports as follows:

‘EIGHTH DISTRICT DELEGATION. •

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 8th Congressional District beg leave to report that they have selected G. H. Hunt of Greenwood, McHenry county to act as director of the 8th District for the ensuing term.

Respectfully submitted,

H. C. MERRIT,

Secretary.

C. D. BARTLETT,

President.

TENTH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 10th Congressional District beg leave to report that they have selected L. H. Coolidge of Galesburg, Knox county to act as director of the 10th District for the ensuing term.

Respectfully submitted,

GEO. W. FERGUSON,

Secretary.

CHARLES A. WHETHERHER,

President.

TWELFTH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 12th Congressional District beg leave to report that they have selected F. I. Mann of Gilman, Iroquois county to act as director of the 12th District for the ensuing term.

Respectfully submitted,

W. A. HAMILTON,

Secretary.

DAVID BUNNBACK,

President.

FOURTEENTH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 14th Congressional District beg leave to report that they have selected Ralph Allan of Delevan, Tazewell county to act as director of the 14th District for the ensuing term.

Respectfully submitted,

W. B. MILLS,

Secretary.

E. H. DIEHL,

President.

SIXTEENTH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute

The delegates of the 16th Congressional District beg leave to report that they have selected A. P. Grout of Winchester, Scott county to act as director of the 16th District for the ensuing term.

Respectfully submitted,

H. MINER,
President.

W. B. CONOVER,
Secretary.

EIGHTEENTH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 18th Congressional District beg leave to report that they have selected E. W. Rurroughs of Edwardsville, Madison county to act as director of the 18th District for the ensuing term.

Respectfully submitted,

EDWARD GRIMES,
President.

ARTHUR WARE,
Secretary.

TWENTIETH DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 20th Congressional District beg leave to report that they have selected L. N. Beal of Mt. Vernon, Jefferson county to act as director of the 20th District for the ensuing term.

Respectfully submitted,

J. M. WARD,
President.

D. BERRY,
Secretary.

TWENTY-SECOND DISTRICT DELEGATION.

To the Convention of Delegates of the Illinois Farmers' Institute.

The delegates of the 22d Congressional District beg leave to report that they have selected H. G. Easterly of Carbondale, Jackson county, to act as director of the 22d District for the ensuing term.

Respectfully submitted,

JOHN T. GALBRAITH,
President.

A. H. FLOYD,
Secretary.

There being no further business to transact the convention of delegates adjourned.

L. N. BEAL,
President.

A. B. HOSTETTER,
Secretary of the Convention.

WEDNESDAY EVENING, February 20, 1901.

This session was opened by a vocal solo by Miss Cornelia Van Etten, instructor of vocal music at the Women's Academy of Jacksonville. She was accompanied by Miss Elsi Tremblett, and sang "The Waltz Song" by Arditi, and on being encored sang a Creole love song.

The following is an abbreviated statement of the address of Mr. W. M. Beardshear on Wednesday evening:

Mr. Chairman, Ladies and Gentlemen: When President Lincoln signed the land grant act in 1862 he did one of the greatest acts of his life and of his administration. It is along this line I want to talk to you tonight. I congratulate you that you have such a good university in this State. The nation has done a great deal to help us along these lines. We have been benefited as states and territories for a number of years by appropriations of the national government. There is the experiment station in each state and territory of the Union, to which the government gives annually \$15,000, and what a contribution it has been to industrial education in our country. Thomas Jefferson used to say that the introduction of a useful plant, especially a bread grain, is one of the greatest benefactions that one man can bestow upon his country. Think what a plant like the alfalfa has done to the western plains! Think of what the introduction of a new grass or forage plant would be to this country! The department at Washington is cultivating 450 varieties of grasses. Suppose we only get out of this one-half dozen—it may mean millions of dollars to the income of agriculture. Along the line of useful grains and cereals, and of the best kind for the different locations in the various states, the stations have done a great good. But more than that the stations have brought agricultural instruction down to our doors. What propositions are true in Iowa and Ohio would not be true in Colorado and Wyoming. And what are true there would not be true in California. Each state and territory has problems new to themselves. These experiment stations are doing a vast work in those directions. The government has started us now where we should help ourselves. While the government has been doing this, a number of states have been adding to what the government does. We in Illinois and Iowa have not done much through the contributions of the states. I understand there is a movement on foot in the Legislature in this State to help in that direction, and I will not feel jealous although in one sense it would be against my state, for I find that the better a sister state gets along in education the better it is for Iowa. I find the better my neighbor next door may be aided, the better it may be for me. A good kept fence and a well kept house have always the unconscious influence to spur me to the best endeavor, and if you can get there first as an experiment station, why I am going to clap my hands and say, "go ahead, God bless you, and do all you can in that line." Now it rests a good deal with the unanimous efforts that you farmers make to see that this law which is now before your legislative body at Springfield, having to do with the expenses of experiment station work in this great State, will find a successful birth, a useful growth and a prominent livelihood in scientific agriculture.

Through the study of the soil by the experiment stations, you can raise 100 bushels of corn to the acre where you only raised 50 or 60 before. The success of agriculture right along is going to depend on such effort and this is only one of the lines that experiment stations are going to help. We find a good many experiments in California. They irrigated so much in California that they brought the alkali to the surface and the lands became sterile. They could not produce anything. The experiment stations have taken up that problem, shown what was the difficulty and how to remedy it.

Suppose through an experiment station, we should take 50 or 60 kinds of fruits and from them get a few varieties of apples that would be stable, suitable and a contribution to the horticulture of the state. Or take the fruits that we have and improve them so that instead of being stunted and half de-

veloped they should be fully developed, see what a great advantage that would be. Butter may be made worth 20 cents a pound instead of 12. We may feed for any kind of a result we want and secure profitable returns. Years ago they used to laugh at the colleges whose people they said were all theory and no practice, but now it is different. At the fat stock show in Chicago students of the colleges gained the \$700 trophy for judging cattle and students of colleges are now sent out to county fairs to judge cattle. The value of the experiment station is shown by the sugar beet industry; it pays in some places and in others it does not. With our vast area it does seem foolish for us to buy so much sugar abroad when we ought to produce it at home. Some soil is good and some is not and there is where the experiment station's good work comes in. They will tell you whether you can raise sugar beets or whether you should raise something else.

The government and states have done well by us and now we should do something ourselves and study what will be best for our interests. These investigations are great fundamental questions. They will have to do with more corn to the acre, with more beef on the steer, with more milk and better butter and cheese from the cow, better plants, better fruits and more knowledge, above all, of the men and women at the plow and in the farm house. The women are not forgotten either for chemistry and domestic science has opened a new realm to them. The kitchen is a good place for a man or woman, for the food of the people is all important. More men have been made bad by bad cooking than through any other source. The woman who has supremacy over her kitchen has supremacy over her home. Anything that would give a woman supremacy over the stomach of a man or woman, would give her supremacy over his head. Try to see that all the equipment required at the agricultural college at Champaign is secured. You want to give it a good equipment and I am glad you are making an effort in that line. When you have it there you have an investment that is going to bring back to you and the people of the State of Illinois many, many returns. You want to get the best of stock there for models. The great Ruskin was prepared for his wonderful life work by being shown early in life the best works of the greatest artists. I would not disparage the colleges founded by good men to fit students for professions, but in addition let us have educated mechanics and farmers. I recently received a communication from a foundrymen's association stating they had learned that the time has come when they must have a scientific knowledge of metals; when they must understand the processes through which metals go and they asked that the colleges give more attention unto the education of foundrymen. Now what is true of the foundrymen is true of every industry in the country.

We are in a realm that means in the victories of business you must have a farmer with a head on him, you must have a mechanic with a head on him, and an industrialist with a head on him. The times are getting better and not worse. We must use our eyes and continue to develop and grow.

Senator H. M. Dunlap then spoke as follows concerning his impressions of fruit culture in Europe:

Perfect cultivation is the prime factor and if our farmers imitated them they would have become millionaires. The forests are in charge of an officer and on his own land a man may not cut timber without the consent of that official, and so the great woods are preserved and more lumber is exported than imported. They burn wood and yet their forests are not diminishing. They have taken such pains with fertilization that they put up the material in tin foil and place it where it will feed a plant several months. They carefully analyze the soil and study best methods.

The Paris exposition was like our world's fair and unlike it. Our great and noble grounds were wholly wanting there. We are wholly superior to them in horticulture. They trim their trees and hedges in absurd and ugly shapes and try to force them into unnatural shapes. The streets of Paris are ornamented by trees of natural shapes and handsome. In the Paris markets we found things very different from ours. Their apples were poor and shriveled. Good apples, grown under glass, sold at wholesale for 40 cents

each. Strawberries sold at 30 cents each and were for the man who married Miss Gould. We saw peaches grown under glass at \$1.40 to \$2 each. This fine fruit was largely sold at auction. When our fruits were first displayed the natives were wonderfully astonished. They had no cold storage in the country except at Havre. Many Frenchmen wanted to know if the fruit hadn't just been gathered and they could hardly believe that it had been grown the year before. There can be no danger of overstocking the market with good fruit. At the close of the exposition some Ben Davis apples were sold for \$10 a barrel. They are hardly as good as the Jonathan or Grimes Golden, but are good enough to export or sell your neighbor. Illinois fruits at Paris took more gold medals than those of any other state. Every two or three weeks new fruits were placed on the tables and it was interesting to see the jurymen. They had to have full evening dress, with stovepipe hats and kid gloves, and put on plenty of style. Some of the farms will pay better in fruit than anything else if properly cultivated and managed. A gentleman in this audience sold a fruit crop a few years ago for \$360 an acre. The work though must be done well or it will fail. In the southern part of the State I tried to buy an orchard and found they wanted \$100 to \$150 an acre when adjacent land was worth but \$25. If we study methods of marketing fruits and products we shall do better. Don't put the worst apples in the middle of the barrel. We must learn to put the best foot forward. Apples from one orchard suitably sprayed and cultivated arrived in good order in Paris and about 90 per cent were fit for exhibition. We could readily see when fruit came from orchards poorly cared for.

Something has been said about legislation. I feel sure that whatever is granted the agricultural college by the State will be wisely used.

Miss Tremblett next played a piano solo in a highly accomplished manner and was heartily recalled, the audience not being satisfied with an acknowledgment but demanding a second number. Her selections were Concert Etude, by Liszt, and "Massa's in the Cold, Cold Ground," with variations.

THURSDAY MORNING, February 21, 1901.

Thursday morning's session was opened by prayer by Dr. Brown, as follows:

"We look unto Thee, oh Lord, our God, for Thy blessing this morning, asking Thee for Thy guidance and trust that Thou will be with us and help us in all things for we are mindful of our dependence upon Thee. We ask Thee in Christ's name, amen."

Thereupon Dr. A. M. Goodrich sang several songs which were received with applause by the audience.

The chairman: I have the pleasure of introducing Mr. H. H. Gross of Chicago, who will give us some facts about good roads.

INFLUENCE OF GOOD ROADS UPON FARM LIFE AND FARM PROPERTY.

By Howard H. Gross, [Chicago. Ill.

The subject assigned to me for discussion is one of high importance and involves, either directly or indirectly, the whole problem of country life. The question is one of especial interest to students of sociology, and it is regarded by them as a factor not to be lost sight of in the evolution of life upon the farm.

The federal census, now nearing completion, shows with increased emphasis what has been a striking fact in every enumeration taken since 1870, and that is the remarkable and unequal increase in the population of cities as compared with the increase in the population of rural districts. For the last thirty years the cities have levied a heavy tribute upon the country, and

have, with increasing numbers as the years have gone by, allured to their portals much of the best blood of the farms until today a very large percentage of the men in the cities engaged in business and professional life were farm born and bred.

It is of interest to note in this connection as an example of this the enumerations of the city of Chicago as compared to the enumerations of the State of Illinois: The census of 1840 shows one person living in Chicago for every one hundred in the State; in 1850 the ratio was Chicago one, State twenty-seven; in 1860, Chicago one, State fifteen; 1870, Chicago one, State seven and one-half; 1880, Chicago one, State five; 1890, Chicago one, State two and one-half; 1900, Chicago one, State one and eight-tenths; at this rate the next federal census will show Chicago with a population exceeding the balance of the State and this will entitle her to a majority of members of the Legislature.

Under the inspiration of the flag we love and the matchless system of free, popular education, the youth of the land have been awakened to the possibilities that lie within them. They are learning that the best is none too good for them. These millions of youth are awake, restless, pulsating with energy; they realize that this is an age of mighty possibilities, hence their intense desire to keep in touch with the outside and everchanging world. One need not sleep, like Rip Van Winkle, for twenty years in order to awake and find a new world in this progressive day—the day that might well be called the electric era—a tenth of that time is enough. That eminent divine, and my beloved friend, Professor David Swing, once said about the city of his home, "No artist can paint Chicago. He may make his studies and sketches and retire to his studio for the task. When it is completed, behold, while he wrought a new city has arisen." The wisest of today can not dream of the possibilities of tomorrow.

At the time it was proposed to build a railroad from Philadelphia to Harrisburg, the Hon. Simon Cameron predicted, in a public speech in the latter city his belief, that some of those present would live to see the time when it would be possible for a man to take his breakfast in Harrisburg and his supper in Philadelphia. No one who heard it then believed it possible. The running time is now about two hours.

There are those present, who are not yet old, whose birth antedates the railway, the telegraph, the commercial application of steam power, and the daily newspaper, while those still in their teens can recall the sensation caused by the Edisons, Teslas and Rotgens in the last few years. Is it a wonder then, that in these stirring times the youth of the farm dreams and longs for the intenser life of the city? He feels an almost irresistible desire to get closer to the nerve center of things. The farm is too quiet. He is not content to be shut in, mud bound for weeks and months at a time. The great outside world is calling to him, and his nature answers the call. "The man with the hoe" does not and must not represent or typify country life in America. The need of the hour that transcends every other need is to let country life feel the pulse beat of the great wide world. Country life demands and must speedily have free rural delivery, and a daily newspaper delivered by Uncle Sam upon the day of its publication; it demands the telephone; it demands above everything else a complete system of good, hard, every-day-in-the-year roads. Distance is no longer measured by the yard stick but by the clock tick; distance is merely a matter of time in this age of rapid transit. Good roads make short miles, bad roads long ones.

FARM LIFE MORE ATTRACTIVE.

Farm life must be made more attractive; the people there must have more of the advantages that hitherto have obtained only in town or city life. Good roads make this possible.

The influence of good roads upon farm life is to dignify it. They make country life better worth the living, they broaden, educate, and uplift this most important branch of the commonwealth; they bring the advantages of the church and the lecture platform to the residents of country districts. They relieve the country dweller of isolation and drudgery. Up-to-date

roads make up-to-date citizens. With good roads he will come more in contact with other men and take larger and higher views of life; he will become more useful to himself, and more valuable to the community. His interest will go beyond the division fence that separates him from his neighbor. He will read more and become better informed. They open to his children the higher schools of the towns and cities. His wife and daughters will have an opportunity to mix in town society to the benefit of themselves and equally to the benefit of their town bred sisters. Good roads will speedily remove the apparent distinction between them; they will become better acquainted, and each will find to her surprise that the other has been misunderstood. Jealousies will be supplanted with friendships, the charm and characteristics, peculiar to the town, and the country girl will be merged and blended in a composite product which is better for the blending.

Man is a social being. Sociability is broadening and should be cultivated. The city and the country have, unfortunately for both, only a bowing acquaintance. Lack of social intercourse, which leaves room for the growth of prejudice and jealousy, is largely responsible for this unwholesome, cramped condition. Bad roads are largely responsible for the slight acquaintance that is maintained between the city and the country, and for the absence of the sociability that would naturally follow a closer acquaintance.

With bad roads as a barrier to free and easy intercourse between the city and the farm, the young mind is warped by wrong impressions, the soul narrowed by prejudice, and sound symmetrical education thereby much hindered, if not rendered impossible.

It must then be admitted, that from end to end of our beautiful, progressive country, the greatest drawback to thorough education, the greatest drag on spiritual, mental, and moral development, is the hindrance to free social intercourse between the city and the country through bad, and at times, impassable roads.

Every farmer knows that there is nothing more destructive to tranquility of mind, nothing that more effectually banishes smiles, and nothing more conducive to gray hairs and wrinkles than to sit on a loaded wagon and see a team struggling through mud and ruts while the wagon tongue swings viciously from side to side.

The farmers have learned after years of experience, that there is economy in raising good stock; that it costs no more to feed a Berkshire pig than an Arkansas razorback, and the Berkshire gives the better result. I recall a remark of Senator Stanford, of California, made to me as we were sitting under his favorite oak tree at Palo Alto, watching his drivers and trainers exercising horses upon his private track. In answering the question as to the cost of raising a good horse he said, "You can raise a horse worth a thousand dollars with the same oats and the same time that you can raise a forty dollar plug." Good roads will pay even better than good stock. It is absurd to have Berkshire pigs and razorback roads.

COST OF PRODUCTION.

The perfection of farm machinery has worked a revolution in all farming methods. Now, a man can with ease do the work in a day that used to take him three or four days to perform. By means of the improved machinery and scientific methods the progressive farmer has cheapened the cost of his produce by half; the perfection of railway service takes his surplus to the market in half the time, with a freight charge of one-fourth the tariff of thirty years ago. There is more money now in fifty-cent wheat, than there was in "dollar wheat" then.

In every field of human activity in this country save one, there have been and are being made giant strides to multiply productivity, lessen cost and add conveniences. Shall we not expect ere long that the top wire of main fences will connect with telephones and join farm to farm, and these in turn to the town at the railway, the county seat and the city? But what shall we say of the roads. In these, there has been practically no advancement in fifty years. Wagon transportation shows little if any progress for a century.

Periodically in every community the farmers go out, and under the direction, or more properly misdirection, of the path master plow up and destroy more or less of the roads in working out their annual poll tax. May we all live to see the end of this idiotic practice. Many of our main traveled roads have had more time and money thrown away upon them in these annual fits of "improving" than it would cost to build and maintain a first-class macadam road. The necessity for good roads is immediate and imperative; expanding trade and the perfection of ocean transportation has put American grain into competition with the food products of Crimea, India, Australia, and the Argentine. In all of these countries American machinery and methods are no strangers and all of the economics known and practiced here, are understood and employed there. If then, the American farmer is in the future to hold the first position as the feeder of the world, he must still further cheapen the cost of his produce in the world's market.

ECONOMIC VALUE.

The economic value of good roads can hardly be overstated. The experience in Massachusetts, New Jersey and New York, show that where hard roads have been built, the incomes from farms have largely increased, and expenditures have correspondingly diminished.

An eminent authority on agriculture says that the farmers in any community having hard roads which will enable them to market their crops upon any day in the year can, by watching the markets, and taking advantage of good prices, gain from 3 cents to 5 cents a bushel on his grain, and from $\frac{1}{2}$ cent to 1 cent per pound on his hogs over and above what he can ordinarily get when, for weeks at a time, he is mud bound and can neither deliver his produce nor keep in touch with the market. He goes further and says: "This means an increase of the cash profits of the farm, of from 75 cents to \$1.50 per acre. There can be no doubt that good, hard every-day-in-the-year roads are worth from \$100.00 to \$200.00 in cash per year for every quarter section reached by them." If this is true, it will, upon the basis of capitalizing the earning power of the farm, upon the same basis that manufactures and other industries are floated, add from \$2,000.00 to \$4,000.00 to the actual cash value of the farm.

Bad roads work a double injury; when the natural dirt roads are good, the teams are usually wanted in the fields. When the rain comes so that work is stopped in the fields, the roads are often impassable. The fact that prices are usually the best when the roads are the worst, is one so general and so often repeated as to be well known to every one. In fact, the scant supply is due to the embargo of mud which creates a shortage in the market and this increases the price. When the roads are good again, the immense quantity of produce thrown upon the market depresses the prices. Bad roads are, in fact, the most expensive burden the farmer has to bear. They require twice the horse power, twice the time and only one-half the load as compared with good roads.

Transportation is really the greatest economic question of the age. In no department of human activity has there been a greater, or perhaps so great, an advancement as in the railway transportation in this country. The American railways have solved the question of the most perfect service at the least possible cost. A modern locomotive over a modern track will carry from 90,000 to 100,000 bushels of grain in a single train. We can boast of the best railways and the worst public highways of any country on earth.

Good roads will do more for the advancement of this country in the next fifty years than any other single agency, excepting only the public schools.

ALL CLASSES BENEFITED.

The farmers are not the only sufferers from bad roads. The country merchant and the city wholesaler are both affected by the embargo of mud. The residents of the towns and cities who must live upon the products of the farm are vitally interested in the uninterrupted delivery of the same. Good

roads are of great importance to the railways, as they serve to equalize the freight business and make it possible to handle a larger volume of business with a smaller equipment of cars than when, as now, it often occurs that with a week or two of good roads following a mud blockade, the railways are swamped with freight they can not handle.

The heaviest tax the farmers, as well as the town resident, has to pay is the tax imposed by bad roads. Let us see: Say prices are good, he wishes to market some grain, but the roads are bad, with four horses he can haul two medium sized loads to market in a day; with good roads he can haul, with two horses, three big loads; the difference in result and extra horse power is the bad road tax. His more humane neighbor saves his horses and misses the good prices, and the loss is the bad road tax. The widow, returning from her day's work, stops at the corner grocery for a dozen eggs and a pound of butter. She asks the price and learns that eggs are scarce and butter is higher, because, as the grocer says, "the roads are so bad the farmers are not bringing in enough and there is a big demand from the city." She pays three cents more for the eggs and four cents more for the butter, and goes out with a sigh, having paid that evening a seven-cent tax upon bad roads.

Good roads will save money to every man, woman and child in the State, therefore all should help pay for them. The saving effected by good roads would build them every five years. In other words, they will pay twenty per cent on their cost every year. It is right, just, and proper that the State should bear a fair proportion of the cost of building gravel or stone roads where they are needed. There is ample precedent for this reaching back in an unbroken chain to the celebrated Roman road built two thousand years ago. In our own country, in Massachusetts, we have an example of where the state pays three-fourths of the cost; Connecticut pays one-half; New York, one-half, and New Jersey, one-third. In several of the western states, notably Michigan, Wisconsin, Minnesota and North Dakota, steps are being taken to change the constitutions so that it will enable the state to assume a part.

Ninety-nine per cent of all farm produce moved by the railway, express and steamship companies is first hauled in wagons. The secretary of the Farmers' National Congress estimates the annual waste in haulage due to bad roads in this country is equal to \$10.00 for every man, woman and child in it.

The last biennial report of the Illinois State Board of Equalization shows the total assessed valuation of all forms of property for the entire State to be 953 millions of dollars, of which Cook county, including Chicago, contributes 381 millions, or 40 per cent of the State total. Farmers and farm property come next with 315 millions, or 33 1-3 per cent. The balance, 257 millions, or 26 2-3 per cent, is made up of cities, towns, villages and corporation property outside of Cook county. Thus, under any good roads law providing for State aid in building roads, only one-third of the State's proportion is paid by the agricultural interests of Illinois. Illinois can and should give substantial aid in building hard roads on the main thoroughfares. We should have as favorable laws as New York or New Jersey.

ALL CLASSES SHOULD HELP BUILD THE ROADS.

To assist in building good, permanent roads, the State should levy a one-mill tax on the property of the entire State. This will produce nearly a million dollars per year. Great as the sum is, when spread over so much property, it would not be felt. It would be less than one cent an acre on average farm property throughout the State. This tax, if used to pay for one-half of the cost of permanent hard roads, would permit the building of nearly two thousand miles per year. When experience everywhere shows that every dollar expended in building permanent hard roads adds from \$3 to \$5 to the value of all land served by them, action should be taken at once.

Only the main roads should be macadamized, and these should be from nine to twelve feet wide, and in every case there should be a dirt road pro-

vided alongside. This dirt road, when dry and hard is the best road known, and will be used in preference to the stone or gravel road. When the rain comes travel will all go to the stone road. This method lengthens the life of the hard roads, which, if properly constructed and occasionally looked after, will last hundreds of years. The old Roman roads, built two thousand years ago in Europe, are still good.

The cost of building hard roads twelve feet wide, where material is convenient, and in many parts of the northern and extreme southern parts of the State, will be from a minimum of \$1,000 per mile to a maximum of \$3,000 per mile. In other portions, where the material will have to be shipped some distance by rail, the expense will run from \$2,000 to \$4,000 per mile. For the purpose of the calculation, \$3,000 per mile is a perfectly safe figure.

COST TO THE FARMER.

The farmer will ask "How much would the tax be on my farm to have hard roads?" This is a vital question, and it goes to the heart of the whole matter. As the answer to the question depends upon the size of the farm, its value, the assessed value of the township and the county, and its location, no answer can be given that will fit every case. The following example, which is based upon conditions that represent the average situation in Illinois, as stated, will furnish an approximate answer: Let us assume that John Jones owns a quarter section in a township in central Illinois. The records of the State Board of Equalization show that \$1,800 is an average assessed valuation of such a farm. The assessed valuation of a farming township is \$300,000 to \$500,000. We take \$400,000 as the basis. Under a State aid road law, the cost of hard roads is divided into two equal parts, charging one-half to the State, and one-half to the township.

The State's portion of the cost would be paid in cash from the one-mill tax levy. The township portion would be paid by issuing bonds, payable in twenty annual installments, with say five per cent interest.

To meet these bonds, with the interest, the township must raise, upon an average, \$1,525 per year for twenty years.

The township tax must be spread over \$400,000 valuation, which will make the rate with cost of collection four mills. So, upon the farm in question, the annual tax bill will be:

State tax, one mill.....	\$1.80
Township tax, four mills.....	7.20
	\$9.00

Add to this the present average road and bridge tax, \$7.20, and we have \$16.20 as the total road taxes for all purposes, including the hard road tax.

Suppose the farm in question is planted to corn and yields an average of forty bushels to the acre; the combined tax then will represent one-fourth of a cent a bushel on the crop. Experience shows, and I believe every one will admit, that a wide-awake farmer, having at all seasons of the year, good, hard roads, can, by watching the market and selling his corn under the most favorable conditions, get at least one cent and often five, a bushel more than he can under present conditions. With hard roads he can take advantage of the market; with mud roads, the market often takes advantage of him. And if our friend on the farm will sit down, take his pencil and figure out the saving he can make by hauling twice the load in half the time by reason of the hard roads and the saving of wear and tear upon himself and his teams, he will see that, in fact, no matter how he figures it he can save the cost of hard roads many times over every year.

The building of hard roads on the main thoroughfares will reduce the present road and bridge tax at least one-half; so the cost of hard roads is so evenly distributed that it does not become a burden.

Usually fifteen, or at most eighteen, miles will cover the main roads in any township; these can be macadamized or graveled, making a permanent hard road at a cost not exceeding \$50,000 in any part of the State, and usually for

\$40,000. In localities having material close at hand the expense can be cut to \$25,000 or \$35,000. With modern road machinery the remaining dirt roads can be graded, crowned and drained, greatly improving the same, and the whole cost will not increase the present road tax over ten cents per acre per year. The whole question is, are hard roads and good roads worth \$16 per year for a quarter section for twenty years?

Generally the cheapest and most accessible material should be used. In about half of the State gravel can be had; in the southern part of the State a very good material known as novaculite is found; in the vicinity of Joliet and Chicago there is an abundance of all road materials, gravel, limestone and furnace slag, while Chicago's great drainage canal has upon its banks millions of cubic yards of good road materials, and at the south end of this stone pile is the Joliet penitentiary.

HELP FROM THE RAILROADS.

Under direction from Washington, a special agent of the department of agriculture took up the question of transporting road material with the presidents of ten of the leading railways of Illinois. In every case they expressed their willingness to haul road material for this purpose at actual cost. One president said: "We will haul it on any terms required, and if cost isn't low enough the farmers may fix the tariff, and we will observe it."

This attitude makes it possible to build hard roads at a low cost in any part of the State.

When the New Jersey hard road law was passed there it was bitterly opposed by the farmers, and to put it in operation in some cases where farmers were the officials, to take the initiatory steps it was necessary to compel them to act by mandamus proceedings.

During the first year only 30 miles of hard roads were built, last year 114 miles were constructed, and the present year over 500 miles are petitioned for by the farmers of New Jersey. Hon. Henry I. Budd, State Commissioner of Roads, says, under date of July 1, 1900: "There is but one opinion as to stone roads, every county that gets one road wants many more, the farmers, who at first so strongly opposed them, are now so ardent that we could spend millions of dollars each year building roads."

RESULTS IN INDIANA.

Township Trustee N. P. Banks, of Hobart, Indiana, a town a few miles southeast of Chicago, says, under date of September 4, 1900:

"My Dear Sir:—Your letter of August 27 to the auditor of this county, asking for a brief statement of the effect of good roads on farm life and farm property, and how hard roads are received by the farmers of this county, has been referred to me for the reason, I suppose, that I am a citizen of Hobart township, which inaugurated and which has taken the lead in road improvement in this county.

Our improved roads are built of Joliet gravel. Under the road improvement law of this state, our first gravel road was built in 1896, after a hard fought election. What will show you more clearly and strongly than anything else, what our people think of good roads, after having had the experience of using and paying for them, is this fact: We are now nearing the completion of our third system of gravel roads, which gives nearly every citizen of the township, a good road by his door. Our last election, held a little more than a year ago, was carried by 8½ votes for good roads, to every one against, our road tax has been cut down from 15 cents on the \$100.00 valuation to 5 cents on the \$100.00. The good effects of hard roads with us are numerous. This community now enjoys the blessing of free rural mail delivery, which would have been impossible under our old system of roads. Grocers and other dealers have their delivery wagons out daily. In fact, we feel that good roads are the foundation of a great many conveniences, which otherwise would be confined to cities and towns. I think I am safe in say-

ing, that farm land in this township is worth and will sell from \$15.00 to \$20.00 per acre more than it would just before the roads were built. Another result of good roads is the effect it has on the pride of the people. You will notice a general cleaning up, muddy places will be made dry as far as possible, yards and lawns will be cleaned up and made attractive, neat walks will be laid around the premises, and everything possible will be done to add to home attractions. Every school house in our township has a gravel road passing by it. Our high school is situated near one end of the township. Our good roads make it possible, and for two years we have furnished transportation for high school pupils from all parts of the township, which helps to make our high school the pride of the community. The question, which has been so earnestly discussed in the last few years, "how to keep the boys and girls on the farm instead of rushing to the cities," I believe will find its solution in the introduction of good roads, which will bring desirable conveniences, and also promote sociability, the lack of which is the great drawback to young life in the country. With good roads, the people of a neighborhood can organize social clubs and know they can meet on appointed times; for instance, we have such a club in this neighborhood, and although we have a thriving town near us, our young people look forward to the meeting of this club with far more interest than they did heretofore to any entertainment in the town. The people of Lake county have become very enthusiastic over the matter of good roads, and by the end of the present season eight of our eleven townships will have completed a system of hard roads giving us over 200 miles of improved roads in our county.

(Signed)

Respectfully,

N. P. BANKS."

It is not the purpose of the department which I have the honor to represent to increase the burden upon agriculture but rather to lessen it, that more of the good things of this world may come to him who plows and sows and feeds the world. A very practical question in relation to the construction of hard roads in Illinois about which the people desire and should have reliable information, is whether it is practicable to build them, at a moderate expense (say \$3,000 per mile), in the corn belt of Illinois, and whether it is a sensible proposition to undertake.

Many of those present are honest in the belief that good roads can not be built over the black muck of Illinois prairies, but let me say to you in all sincerity and with the highest emphasis that there are no insuperable difficulties in the way, and that by proper drainage as lasting and satisfactory roads can be built over Illinois prairies as can be made anywhere. The most important feature of road building of any kind is a thorough system of drainage. Where practicable open ditches should be used as well as four to six inch tile pipe upon either side of the roadway. As a matter of fact roads can be built cheaper over Illinois prairies where the ground is generally level and very little grading necessary than roads in New York and the New England states.

ARE GOOD ROADS PRACTICABLE?

Perhaps the best answer to the question as to whether it is practicable to build roads such as those contemplated, is to state that such roads are being built in various parts of the State at a much less cost than we are considering. Among the points may be mentioned Saybrook, Gibson City, Lexington, Peoria and LaSalle. The usual width of these roads is twelve feet and the cost is from \$1,000 to \$1,800 per mile. Decatur has built about 20 miles of very good gravel roads at a cost of \$1,200 per mile. In and around Paris, Ill., approximately 75 miles of good gravel roads have been built at a cost of from \$900 to \$1,500 per mile. Many other instances might be mentioned.

There is present today one of the directors of this institute, Mr. D. H. Shank, who gave me this information, and I would ask him to tell the audience if I am correct, (Mr. Shank arose and said the speaker quoted him correctly, that the roads were built for the price named, and that they are very popular, and that more roads would be voted upon at the spring election.) This latter proved to be correct and the roads carried by a large majority.

I was also told by Mr. Wagner, Pana, Ill., that he lost between \$2,000 and \$3,000 upon his wheat crop last year because of his inability to deliver grain when the market was the best. (Mr. Wagner confirmed this.)

It is quite remarkable that no community anywhere ever began the building of hard roads except after a most stubborn contest and bitter discussion, and after being told, as the people of Illinois are being told, that taxes would be ruinous and that it would bankrupt the tax-payers. It is also true that no community ever began the building of hard roads that did not keep it up. And if the building of hard roads was ruinous, certainly these people who have had the pleasure of building, using and paying for them are the ones to make the discovery. What is needed is honest knowledge and open discussion of this proposition, and it is significant that out of thirty-five county and district institutes, where I had the pleasure of presenting this question, thirty-one voted to recommend the legislation necessary to commence building hard roads under the State aid plan.

EFFECT UPON PROPERTY.

The testimony as to the effect of good roads on the value of farm property is unanimous and overwhelming and shows conclusively that every dollar expended upon the construction of hard roads adds at least five dollars to the cash value of the farms, and will increase the cash income from the farms more than twice the annual road tax. Or in other words, good roads will pay from eight to ten per cent a month on whatever amount they increase taxation.

He who will point the way whereby the current of young life may be changed to flow from the city to the country; that will scatter the flat dwellers over God's green prairies, will deserve a monument. So far as we can see, the forces to do this are good roads, free rural mail delivery, the farm telephone, and rapid transit. These are mighty forces, and will revolutionize our social conditions.

Good stone or gravel roads are a permanent asset to the State, the county, the township and the farm. If properly constructed and looked after, they are good for several generations, and the cost should be spread over at least twenty years, and thus let those who come after us and who will partake of the benefits, help bear the burden.

As an economic and sociological question, good roads transcends every other consideration. Its influence and beneficence will in years to come permeate the entire fabric of civilization uplifting, broadening and ennobling the present and succeeding generation. As the mound builders were the highest expression of prehistoric man, so the road builders will become the best and highest product of modern civilization in the century just at hand.

DISCUSSION ON THE ROAD QUESTION.

[Note by the Secretary. Mr. Gross's paper, especially the proposition of State aid in road building called forth a great deal of discussion among the delegates. Groups of delegates some favoring and some opposing the proposition of State aid, discussed the matter till after the midnight hour in the lobby of the hotels. Resolutions in favor and resolutions against were drawn up and presented to the Committee on Resolutions.

So earnest was this discussion that those who expected to take an early train for home remained over for fear that some resolution might be passed on the report of the committee that opposed their views.

The committee, however, could not agree and no resolution was presented on the road question, this action of the committee seemed to please the majority and leaves the road question an open and important one to be further investigated and discussed at the future institute meetings in each county.]

THIRD ANNUAL MEETING OF THE ILLINOIS ASSOCIATION DOMESTIC SCIENCE.

THURSDAY MORNING, February 21, 1901.

SECRETARY'S REPORT.

The third annual meeting of the Association was held at Jacksonville, Ill., February 21, 1901, in connection with the Farmers' Institute.

The first session was held in the parlors of the Pacific Hotel at 9:30 a. m., and was devoted to reports of officers, reports of delegates, miscellaneous business and election of officers.

The President, Mrs. Josesh Carter, of Champaign, called the meeting to order, and in the absence of the Secretary, Mrs. J. C. Blair, of Urbana, Mrs. S. Noble King, of Bloomington, was appointed Secretary *pro tem*.



Reports from officers and delegates were encouraging, showing an appreciable advance in numbers and in interest throughout the State.

That the work of the County Domestic Science Association is steadily growing was shown by the fact that in 1899 fifty-one counties reported organization in connection with the Farmers' Institutes, while in 1900 sixty-eight counties were in line. It is hoped that by persistent effort and well wrought out plans a much larger number will be added before the next annual meeting.

The subject of teaching elementary housekeeping and sewing in the rural schools was presented by Mrs. King, and samples of sewing that had been done by girls from

Mrs. Joseph Carter, Champaign, President.

eight to fourteen years of age in a district school were on exhibition. Many inquiries followed as to the plan for the work and the text books suitable for the teacher's use.

A suggestion was offered and later embodied in a resolution favoring a short-term school for housekeepers at the State University. This met with hearty and enthusiastic approval.

The Committee on Nominations presented the following names for officers for the ensuing year:

President — Mrs. Joseph Carter, Champaign.

Vice-President — Mrs. H. M. Dunlap, Savoy.

Secretary — Mrs. S. Noble King, Bloomington.

[Signed]

MRS. NELLIE S. KEDZIE, Peoria.

MRS. HENRY GRUNDY, Morrisonville.

MRS. L. N. BEAL, Mt. Vernon.

MRS. CORA M. CONOVER, Virginia.

MRS. AGNES BALL THOMAS, Thomasville.

MRS. T. J. PITNER, Jacksonville.



Mrs. Sara Steenberg, Chicago, Director 3d district, Chairman of Committee on Domestic Science.

On motion the Secretary was instructed to cast the ballot for each of these ladies, and they were declared duly elected. The meeting adjourned to meet at 1:30 p. m. in the Opera House.

The second session was held in the Opera House in connection with the Illinois Farmers' Institute. Mrs. Sara Steenberg, Chicago, chairman of Illinois Farmers' Institute Committee on Domestic Science, presiding.

The Jacksonville high school chorus of 100 voices, in charge of Mrs. Constance Smith, their musical instructor, rendered two excellent selections, the latter one as an encore.

In the absence of Mrs. J. C. Blair, Secretary, the Secretary's report was read by Mrs. Kedzie, of Peoria.



Mrs. S. Noble King, Bloomington, Secretary for the ensuing year.

Mrs. Mary Turner Carriel, of Jacksonville, gave a gracious and hearty welcome to delegates and visitors, to which Mrs. Nellie S. Kedzie responded.

Miss Isabel Bevier, professor of household science at the University of Illinois, gave an address on "Domestic Science at a State University."

At the close of Miss Bevier's address, the high school chorus again entertained the audience with two selections, which were greatly appreciated, after which Professor James M. White, of Illinois State University, read a paper upon Farm House Architecture. Mrs. Elizabeth O. Hiller, of Chicago, talked of the Evolution of the Kitchen.

The following resolutions were presented by the committee and unanimously adopted:

Resolved, That the board of directors of the Illinois Farmers' Institute be asked to recommend that at least fifteen minutes of the time of the program of the regular County Farmers' Institute be given to a woman to present Domestic Science to the Institute.

Resolved, That we urge that sewing and Domestic Science be taught in the rural schools of Illinois.

Resolved, That we recommend that a two weeks' school for housekeepers be held at the same time as the school for corn judging and stock judging at the University of Illinois.

Resolved, That we extend our heartiest thanks to the board of directors of the Illinois Farmers' Institute for their loyal support.

Resolved, That our thanks be especially due to Mrs. Davenport and Mrs. Blair for their efficient help as Secretaries of our State Association, and that we feel that to their prompt and intelligent services are due much of our success.

Resolved, That we are grateful to those who have entertained us so well with the instrumental and vocal music and other pleasing features on our program.

Resolved, That we greatly appreciate the hearty welcome and entertainment extended to us by the hospitable people of Jacksonville.

[SIGNED]

MRS. H. G. EASTERLY,
MISS FRANCES R. FULKERSON,
MRS. FRANK CROSS.

One of the most interesting features of the meeting was the class in Domestic Science, led by Mrs. Kedzie for a half hour each morning of the Institute.

The topic for the first morning was "The Proportionate Cost of Living." Taking two examples, the family of five, whose income is a thousand dollars a year, and the girl who earns twenty dollars a month, she developed, by discussion, the right proportion to be expended for shelter, food, clothing, incidentals and benevolences, not forgetting to regularly lay by a certain sum each month.

The second morning was devoted to a discussion of the "Responsibilities of Parents," in which many interesting incidents were given, showing that the misdeeds of children could easily be traced

to the want of proper training by the parents; also to the example of parents, which is too often quite the reverse of their teaching.

The third topic was "Balanced Dietaries." Different individuals were asked to give what they considered a well balanced bill of fare for breakfast and dinner.

Much interest was manifested in each of the topics, and full and free discussion followed.

[Signed]

MRS. S. NOBLE KING,
Secretary pro tem.

THURSDAY AFTERNOON, February 21, 1901.

Mr. Chairman:—I have asked Mrs. Sternberg, who is one of the members of the State Association of Domestic Science and chairman of the Illinois Farmers' Institute Committee on Domestic Science, to preside for us this afternoon. Mrs. Sternberg:

Mrs. Sara Sternberg:—Ladies and Gentlemen: This meeting as we know is to talk about everything or about the things that pertain to a home, to home making. In every branch of home making it is quite important that the men should be as interested as the women. Several gentlemen have told me this morning that they could iron if necessary; they could bake bread; they could make butter. In these days when it is hard to secure hired help a man should also know how to do those things to help out home if necessary. If the wife is ill these things must be attended to. Therefore we claim we have a right to invite the gentlemen to these meetings. Mrs. Dunlap, of Urbana, tells me that they have a class of twenty boys who learn cooking and they were quite as much interested and grew quite as proficient as the girls. I will say no more now upon that subject because it will be so thoroughly discussed. I have the pleasure of announcing a song by the chorus of the public schools of Jacksonville, who have been instructed by Mrs. Constant Smith.

The following selections were then rendered in a capable manner by the freshman class of the Jacksonville high school, under the direction and training of Mrs. Constant B. Smith: "Forth to the Battle;" Fairy Chorus, by Verdi; Little Mermaid, by Anderson; "Forsaken," by Koschat.

Mrs. Sternberg:—It must be conceded that we can give you nothing sweeter than you just had—you will get it first and last today.

At a meeting of the Domestic Science Association this morning there was an election of officers. Mrs. Joseph Carter succeeded herself and is again president of the Domestic Science Association; Mrs. Dunlap, of Savoy, Vice-President, and Mrs. S. Noble King, of Bloomington, Secretary. They are officers who have served during the last year and have won the admiration and commendation not only of the members of the Farmers' Institute but of the people of the State and of the United States. If I understand it correctly it

is the largest organization of women in the United States. At the meeting this morning the ladies very readily granted that much of their success was due to the help that they had received from the men. There are some resolutions to be reported.

REPORT OF THE SECRETARY OF THE ILLINOIS ASSOCIATION OF DOMESTIC SCIENCE.

Mrs. J. C. Blair, Urbana, Ill.

The Illinois Association of Domestic Science has reached its third anniversary, and as we meet to celebrate this event it becomes the pleasant duty of the Secretary to add to the general good cheer by reporting a successful year. The Association has made no wonderful hare-like leaps in the course of its progress, but from all sides come words indicative of growing interest and achievement. Reviewing from its beginning this year which closes to-day, it seems unnecessary to mention the second annual meeting held at Mt. Vernon last year, inasmuch as a very full account of its sessions is to be found in the report of the Illinois Association of Domestic Science, published in May, 1900.

Some accounts of this 63-page pamphlet may not be amiss at this time. It has gone into the hands of so many people throughout this State and in others that it has aroused more than local interest. It was prepared by Mrs. Joseph Carter, the President of this Association, and Mrs. Emma Davenport, its Secretary. Just how much time and energy these two earnest workers for the cause of domestic science expended in its preparation will be apparent perhaps only to those having a knowledge of what it means to prepare such a bulk of material for the press. But each and every one must have been impressed by the value of the contents of the little volume and the extreme taste and carefulness as to details displayed in the preparation of its pages. Two thousand copies of this report were printed by the Gazette Printing House in Champaign at a total cost of \$103.65, and were delivered to the present Secretary in the early part of July. These books were then mailed or expressed in varying numbers to the officers of the Illinois Farmers' Institute, to the officers of the county associations of domestic science, to each distinctively agricultural paper in the State, to each publisher of domestic science literature, and to each editor of domestic science magazines in the United States so far as known, as well as to each name on the mailing list, there being probably about 350 such. Just previous to the meeting of each county institute an additional number were sent, ranging from five to twelve according to the number sent earlier to that same county. If some counties failed to receive these additional copies at all, or received them too late for distribution at the institute it is due to the fact that some difficulty was experienced in ascertaining the dates of such meetings. There are still on hand 150 copies, which will be distributed as called for until the supply is exhausted. Calls, additional to those of the officers have come for the reports from almost every county in the State, while from New York, Massachusetts, the Dakotas, Alabama and Idaho, our sister club women have asked to be remembered in the general distribution of the booklets. A quotation or two taken from letters regarding this report may well find a place here. "You will please accept my thanks for the 1900 announcement of the Illinois Association of Domestic Science. It is a very complete and creditable publication, and will greatly aid in promoting the good work. Kindly send us twenty copies." An editor from the west writes, saying, "We should be glad to use some of the articles giving proper credit for the same." Another editor from the far east says, "We have been exceedingly interested in the pamphlet issued by your State Association of Domestic Science." And so instances might be multiplied showing the general appreciation of this little account of our organization. The present Secretary feels that the value of the book is sufficient justification for devoting to it so much of the time allotted to this report. Particularly is this true since she can in no wise be accused of self praise, her only share in it consisting in consigning the parcels to the post or expressman for delivery.

It was a matter of general regret to the members of the Association at large when it was learned that its faithful Secretary, Mrs. Emma J. Davenport, had been compelled to give up her work, but not her interest in the Association.

Because of the absence of Mrs. H. M. Dunlap, the Vice-President, there was no Executive Committee qualified to act, and the President appointed Mrs. J. C. Blair, Urbana, Illinois, to fill the vacancy. Thus without warning do some "have greatness thrust upon them." It was with considerable trepidation that the new Secretary assumed the responsibilities of her office, knowing how hard it is to fill a favorite's place, but the unfailing kindness of the President and officers and members throughout the State has been a constant source of pleasure and help to her.

Aside from distributing the reports but little was done during the summer months, except in the way of reviewing books and periodicals which were furnished by the courtesy of publishers, no books having been purchased by the Association during the year. However, five were recommended as additions to be made to the Farmers' Institute free libraries. These five were: Air, Water and Food; From a Sanitary Standpoint. Mrs. E. H. Richards. The Cost of Living as Modified by Sanitary Science. Mrs. E. H. Richards. Plain Words About Food. Mrs. E. H. Richards. Domestic Science in Elementary Schools. Miss Lucy Wilson. Bread and Bread Making. Mrs. S. T. Rorer.

Among the literature examined might be mentioned the various bulletins issued by the Department of Agriculture at Washington, also by the offices of Experiment Stations; The Easiest Way in Housekeeping and Cooking, Helen Campbell; Domestic Science in Elementary Schools, Wilson; Study of a Child; also, How to Feed Children, both by Mrs. Hogan; Good Cooking, Mrs. Rorer; Chicago Record Cook Book; Model Homes at Little Cost; the various kitchen and household magazines and many of the earlier publications on Domestic Science. Some of these books, as has been said, were furnished through the courtesy of publishers, others were in the personal libraries of the Secretary and President, and still others came from the public library. It is certainly not an extravagant desire if it is admitted that the officers have felt the need of having all these and many more in a compact library for ready reference. Requests come from all over the State, asking for help in the planning of programs, for outlines and references for papers, etc., and much time might be saved to the officers if a library were at hand.

As the opening of the institute season approached, plans were laid for the reviving of such county organizations as needed it, and that this is the right word for the place may be surmised from the fact that one despairing secretary for a county institute wrote, "In my opinion our Domestic Science Association is about ready for the undertaker."

With regret must it be confessed that not even the most heroic treatment brought that particular society to life again. But many other organizations were in a flourishing condition, and these needed nothing but a reminder of the coming program in which they were expected to take earnest interest and part.

At the Princeton meeting held February 22, 1899, twenty counties of the State were reported as already organized, or about to organize, for the study of Domestic Science. At the Mt. Vernon meeting held February 21, 1900, Mrs. Davenport had the pleasurable duty of announcing perfected organizations in fifty-two counties of the State, together with not a few township clubs in many of the counties. Today, so far as the returns have been received by the Secretary, sixty-eight counties are organized. It was hoped and believed that at least seventy counties could be in line before this annual meeting, but if so the reports have not yet reached the Secretary. For the purpose of facilitating matters a postal card, arranged for the insertion of the officers' names, was sent to each county in the State, but not all have been returned, and this renders the report less complete than it would have been if all to whom the cards were addressed had complied with the request to fill them out.

In many counties throughout the State township clubs are doing good work, and in this way are taking the study of household science to the very doors of the farm homes, for whose inmates the Association of Domestic Science has been specially intended. This by no means implies that city sisters are unwelcome, but simply that to them club privileges have been open for many years, while the wives and daughters on the farms and in the smaller villages as a result of their greater isolation have no such opportunities.

It is not the intention of the Secretary to assume the privileges of the county delegates and make extended reports of the work of individual counties, but special reports which can not fail to be of interest have been sent from several counties.

From Mercer county comes this word: "The Domestic Science day was a perfect success in every instance. Great interest was shown, and a church full of ladies (a few gentlemen) had the benefit of our program. We have a local club in Aledo doing good work."

The McHenry county secretary says: "We had a very successful meeting, having received much assistance and many courtesies from the president and secretary of the county institute."

Mrs. G. W. Shippey sends word from Stephenson county that they have a local club in Waddams township doing good work.

Bureau county officers write: "We have done a lot of hard work and feel that the results fully pay us for our outlay of strength and enthusiasm. We have made our county organization a sort of central committee, consisting of president, vice-president, secretary, and two advisory members appointed by the president. Also a vice-president from the twenty-five townships as fast as a woman could be found who seemed to be the right one to make a success of the work in her neighborhood. The getting of the vice-president was the hard work, but a woman has at last been secured in twenty-four out of twenty-five townships and we have a flourishing club in nearly every township."

Crawford, Jasper, Sangamon, Edwards, Wayne, and other counties also report flourishing local organizations.

These are samples of the reports which are sent in from time to time to the State Secretary by many of the county officers. It is to be regretted that not all organized counties have favored the State officers with even annual reports. Such reports whether encouraging or not, are valuable to the State Secretary, enabling her in turn to make an accurate rather than a roseate but imaginary report at the annual meeting.

Starting out with twenty-two counties in line we now have sixty-eight counties enlisted for us and many more send word of plans to organize next year. One or two counties have expressed themselves as club-ridden to death and therefore disinclined to take up our work. It is confidently believed from present indications that fully ninety counties will be with us in time for our next anniversary.

If, as Mr. H. W. Wiley, of the United States Department of Agriculture, says, "The great evils of our time and country are not intemperance, bribery, and trusts, but the frying-pan, bicarbonate of soda, and pie," then it is possible that the first and greatest reform should take place in the kitchen, but it is the earnest desire of the State association that something more should be read into the term "domestic economy" than just cookery—be it even perfection. I like that thought of our past Secretary, Mrs. Emma Day-enport. She says: "Domestic science means the science of the home, and the home includes father, mother and children. It means, then, all that is for the best welfare of these, individually and collectively." How much more than the mere food and drink should we as an association of domestic science concern ourselves about. Domestic science study in the counties should not be allowed to stand for the study of cookery only—desirable as that is in itself. There are too many other phases of home life demanding immediate attention if that life is to be rounded out symmetrically. We are not doing everything required of mothers if we are not rearing our families

intelligently and wisely. Well-fed bodies deserve well-stored minds to direct them, and both of them deserve and demand well cared for surroundings. The importance of all this, it is the mission of the Illinois Association of Domestic Science to impress upon its members throughout the State.

WELCOME, AND ADDRESS, "THE UNIVERSITY."

By Mrs. Mary Turner Carriel, Jacksonville.

Mr. President, and members of the State Domestic Science Association, and friends:—We welcome you today to our little city, one of the oldest and most honored in the State of Illinois. We welcome you to our homes and to all that we hold most dear. You have come to help us make these homes more attractive, more comfortable and our dear ones stronger and happier. No nation can compete in honor and usefulness with the nations of the earth save only the countries of happy homes and healthy people. We claim to be and to have these but not to the full extent that we desire, so from selfish motives as well as from unselfish motives we welcome you here today.

Jacksonville is honored in many things. I heard a doctor of divinity say it was a paradise for ministers; it surely is for the farmers of Morgan county and for their wives. Jacksonville is honored by being the home of one of the most successful generals of the civil war. Admiral Dewey when he was here last spring, said, that the raid of General Benjamin Grierson would go down into history side by side with the retreat of the ten thousand led by Xenophon, and with Sherman's march to the sea. Lately we have had another honor added to our list. It is not to be found in any other city or town in all this glorious land. We hold in deepest love and reverence the wife of Illinois' grand war governor and the mother of our royal Governor, Richard Yates—one woman—wife of one Governor and mother of another. As you go through our city I hope you will notice the home of General Ben Grierson, the old home of the widow of our war governor, her present home and the recent home of our royal Dick, they are all on the street car line on East and West State street. We welcome you to all that we hold most dear.

I have been asked to say a few words upon the University, a subject especially dear to me. It is the joy and pride of my life, for is it not a monument to the wisdom and unselfish devotion of that father, who lived long enough to realize your grateful appreciation.

There are many things relating to the early history of the University which I would like to tell you, but the questions at the present time are more important. I will only indulge myself in one story. My father was a hard working man, a poor man, who worked all day in the fields to support his family, and read and wrote late at night, often till three or four o'clock in the morning. The dear eyes could not stand such abuse and when the time came for the lecture tour he went forth with white linen cloths bound upon his eyes and these covered with a heavy black silk bandage. He was led by Brunson Murray, of New York City, tall, erect, elegant in appearance, one of the handsomest and wealthiest men then in Illinois. Blindfolded, bowed down with hard work and hard study, the lecturer was led upon the platform and his hand placed upon the desk. Is it any wonder that standing side by side the people should christen them "Beauty and the Beast?" But they soon learned to love the figure of the Beast and greeted him with applause at the close of every lecture.

I wish I could picture to you the University as it stands today, in the beauty of all its buildings which have been so generously provided by the State of Illinois; with its many colleges and many schools and many departments, and its 2,500 students, and alumni in nearly every state and territory in the nation. It is an honor to the nation as well as to the State.

There are two departments which are represented here. One the department of architecture which I will leave to Professor White to dwell upon. Only I will tell you this—what Professor White will be far too modest to say to you, that the department of architecture stands among the first in the land, and Miss Bevier who will speak to you of the department of domestic

science in a far more instructive and interesting way than I can. We are all experimenters and investigators in this line. This subject is important to us. Disease is divided into two classes—diseases of climate and diseases of diet. A young doctor said a few days ago that his medical education was almost a failure, for he had not yet made a thorough study of diet. We expect grand things from this department.

The college of engineering has for many years led similar colleges all over the country. For the last two years it has been somewhat hampered by lack of money, but we expect this year that it will spring forward and take its place in the front again.

The college of literature, under Dean Kinley, is doing good work, and its school of library science, with Miss Sharpe at the head, whom many of you have met and of whom the head of the school at Albany, New York, said she was second to none in the United States. I think there is not one thing our President, Dr. Draper, takes more pleasure in than he does in the women who are at the head of their departments—Miss Jayne, dean of the woman's department, Miss Sharpe at the head of the library school, Miss Bevier at the head of the domestic science, Miss Carpenter, director of physical training.

The colleges of medicine and law are doing well. I wish I could speak to you of them all. The college of science under Professor Forbes, who is also at the head of the State Natural History Society, and the Experiment Station formerly located on the Illinois river. Do you know, that in all the British Empire there is not an experiment station similar to that upon Illinois soil? The British scientists lose no opportunity to remind their government of this humiliating fact. There is many a scientist abroad who never heard of McKinley and Bryan, but who can tell you all about Dean Forbes and his wonderful investigations. The colleges of medicine just now require their students to study bacteriology and biology as Professor Forbes has taught it for more than thirty years at the University.

We come now to our agricultural college, the pride and glory of the University, for is not agriculture the principal interest of the State of Illinois, and what can add more to the welfare of the State than the improving of its agriculture? Universities grand and wonderful, have blessed the world for more than a thousand years. Ireland today the home of ignorance and poverty, was once the home of colleges.

Fifty years has not passed since the State University question was first brought up. In the campaign of 1860 Stephen A. Douglas assured my father that if he was elected he would sign the bill for an industrial university. President Lincoln soon after gave him the same assurance. So whether the country went Republican or Democratic, the bill was safe, and it was the first civil bill to receive the signature of the immortal Lincoln. At that time, to advocate the idea of an industrial college excited only ridicule in the minds of the so-called learned men of that day. But our University was established. It began, it grew, it gave promise of wonderful things when alas! it began to droop and to die; so easy was it to follow in the course of old university lines; so easy was it for the old and well established to crowd back the new; so difficult was it to blaze a path through the primeval forests of untried truths; so difficult was it to find a genius requisite to lead, and the person with the requisite training it was absolutely impossible to find.

When I went upon the board four years ago, a few old chairs, little rooms up in the attic and down in the basement, were the sum total of the college of agriculture. But if we did not have rooms and apparatus, we did have men. Men we had, men we used, and men make any institution of learning. A new dean has recently been called, alive to his work, in sympathy with it. He awakened your interest, and secured your help and the college of agriculture stands today among the first in this land. We make no idle boast. By its students it shall be judged. You have heard of Professor Kennedy's triumph. One million dollars could have been saved to the people of Illinois last year had \$100,000 been expended in investigation and information for our fruit growers alone. A great sum is \$100,000, but is not its expenditure worth the result? Support Professor Blair in his horticultural work and in a

few short years there will not be a state in the whole union that can equal Illinois in its fruits and vegetables. Support Mr. Hopkins in his work in agronomy; let the soil of Jo Daviess county and Alexander county and all the counties between and every nook and corner in each county, be analyzed; let maps be made and printed so that you can tell at a glance the soil of any part of the State, just as you look upon your meteorological and geological maps, then the people of the State will be alive to the fact that the three principal rivers of Illinois which take their rise on or near the University grounds are not the only rivers of power that flow out from the University to all parts of the State to bless it.

I believe in every great work of life there is always someone prepared to take up the duties should anyone fail or be stricken down while in the harness. But I confess to you that my faith would be sorely tried should Dean Davenport fail. A man who could lift the college from the waters of oblivion that were just ready to engulf it, and in four short years place it in the front rank of the colleges of the land, who can judge so accurately of the requirements of each department and can find the men best fitted to meet those requirements, is a very difficult man to duplicate. We have petitioned the legislature for money to establish a school for social and political science and commerce. Our consuls and foreign representatives have oftentimes been picked up here and there and everywhere—patriotism and fitness are not always recognized in political appointments. Let us have a school which will fit our representatives to compete with representatives of other nations with whom they come in contact. I know you will not be in sympathy with my next point, but I must tell you of it. We have petitioned the legislature to do away with fees, the tuition fees. A great many years ago it was voted to charge fees in the mechanical and agricultural departments. This was a mistake. The University is supported by taxation just exactly as are our public schools. One should not pay fees for what they have already paid for in taxes. No one today pays tuition in our State public schools. Why should they in our State University which is supported in exactly the same way? It is as necessary that our young people should enter universities as it is that they should have an elementary education. An elementary education prepares the individual for a life of happiness and usefulness. A university education adds to the honor and the glory of the nation. Some even question why the State University exists at all. It exists first, because the United States government is behind it, and second, because the State of Illinois is behind it, and just so long as there is a government at Washington and just so long as there is a government at Springfield, it will stand and endure. It is governed by exactly the same laws that govern our forests, our wonder lands and our parks. It is guarded and protected exactly for the same purpose, for the people and for their children. It is just as necessary for their future as it is to provide and guard these parks and primeval forests, the birthplaces of our rivers. The \$150,000 for our building of chemistry we must have. Every department in the University is hampered by the outgrown quarters and the antiquated condition of the present building. Professor Palmer at the head of this department is a guarantee of its standing not only in this country but abroad. We also hope for a woman's building. We do need it most seriously. We have not done much for our girls. Please help us in these two things. There are many other things I have omitted, not because they are of less interest, but because I must stop somewhere. The graduate school, the preparatory school, the summer school, which has proven such a success, the able professors, the beautiful campus and large buildings make it an ideal place for study. Then there is the department of military science with its battalion of cadets and many other things I must omit, all exceedingly interesting to you and to me. You may well be proud of your University of Illinois.

The Chairman: By a very happy arrangement, the committee on program for this evening wishes me to announce that a lady who is a great favorite in the State, will respond to this address. Whereupon Mrs. Kedzie spoke as follows:

Mrs. Kedzie: I am sure everyone who is gathered here to attend this meeting, will join with me in thanking Mrs. Carriel for her cordial welcome.

Fifty years ago this year, a man who lived here in Jacksonville journeyed by slow work up the river, across the land by stage coach, to a meeting in the northern part of the State, and he went on purpose to address the first agricultural meeting that was called in the State of Illinois. With his prophetic vision he saw out and on way into this century of ours and saw the



Mrs. Nellie Kedzie.

needs of the young people growing up in his own State, and while he talked of agriculture as it was then, he talked more strongly still of the founding and equipping of a school which should give to young men the knowledge necessary to make them able workers in this Prairie State. That man worked long and faithfully, and lived to see the result of his labors shown by the Agricultural College, of which we are so proud today, and in the work for agriculture which places Illinois in the front rank of all the states in the union. When that man, burdened with the snows of ninety-three winters, slipped out of life and went into the far country, his mantle fell upon a worthy representative, and today we are welcomed to this Athens of Illinois by the daughter of Professor J. B. Turner, who did so much for agriculture in Illinois.

Those of us who have come to Illinois in later years have found a warm welcome from Mrs. Carriel, and as we have all grown to know her and to love her, we appreciate something of

the heritage which her father left, in a realizing sense of her own work for the girls of Illinois in the same agricultural college for which her father spent the best thought of his life. The gracious words which have come to us today are but a tiny bit of the real welcome she gives to all workers who are trying to advance the interests of the young people of her State. And as her father's ambition was for the boys, she has put her strongest work into effort to advance the education of our girls, and the success of her work is shown by the department recently established in the agricultural college in Champaign.

I am sure you will echo the words which I am glad to speak in thanking Mrs. Carriel for her cordial welcome to this, her home city. We look to her as one of the strongest, most able women of the State; and with her calm insight, her capable judgment and her energy, she gives to each of us new courage to go on and make more of our lives because she has given us an example of a strong life well lived.

May she be spared to us many years, and as she has welcomed the Farmers' Institute to Jacksonville, may we all take away from this beautiful, tree-shadowed town a new impetus toward the work which shall not only satisfy Mrs. Carriel in her ambitions for the State of Illinois, but which shall make us wiser people and enable us to do stronger work as the years go by.

We thank you for the cordial welcome; we are glad to know something of Jacksonville; we are glad to meet in a town which has lived up to the standard set by the strong man of fifty years ago, and we hope this coming together will be a source of strength to us all which shall mean better men and women, and consequently happier homes, in this State of which we are so proud.

HOUSEHOLD SCIENCE IN A STATE UNIVERSITY.

By Miss Isabel Bevier, Professor Household Science at the University of Illinois.

I had thought to answer for you today two questions concerning the subject assigned to me, Household Science in a State University, What do you mean by it? What is its province?

At the request of your secretary a third question is added which will be answered first. What is the origin of this Domestic Science movement? Anything like a complete answer to that question would require more time than I have the right to claim for this address. I think I can give briefly, however, some of the factors that have entered into its development and show its relation to other educational movements. The thoughts and feelings of each age permeate and shape the educational ideals of that time. This is pre-eminently the industrial age, the age of wonderful progress in machinery and manufactures, in agriculture and industrial arts.

This industrial spirit made itself felt in our schools and demanded in no uncertain terms changes in our courses of study by which the training of the hand and technical skill should be developed as well as the trained memory.

At least three departures mark the steps in this development:

1. The introduction of technical schools, beginning with the one for civil engineers at Troy, New York, in 1835.
2. The Land Grant Act of Congress in 1862 which assured to each state a college of agriculture and mechanic arts.
3. The introduction of manual training and sloyd into our public school system.

It is interesting to note in passing that the manual training school as it exists in the United States combines within it the ideas of three quite different schools of the old world, viz: the trade schools of Germany and France, the sloyd work of Sweden, and the Russian government school at Moscow for the training of government engineers. In this school three years were given to studying the nature of the materials, the theory of tools and the fundamental principles of construction. In the next three years the students applied these principles and whatever knowledge and skill had been gained, in work for the government.

The exhibit of this work at the Centennial Exposition of 1876 made a profound impression and showed how to solve the vexed question of bringing together in an educational way the shop and the school. It showed how to make the shop the laboratory for the applications of the principles learned in the school and thereby gave to the shop work the broader view and the better training, and to the school the advantage of constructive work, the opportunity to supplement theory with practice. Thus there came into existence the manual training school of America. The first one was organized at St. Louis and began its work in 1880.

In these three departures I find the real beginnings of the Domestic Science movement.

Manual training for boys was followed by manual training for girls. It was sometimes work with fabrics, sometimes with food and later with economics and art of the home.

The work of the agricultural college is known to many of you. At first their doors were opened to the boys only, but very soon a request came that something be done for the girls. It is well understood that the agricultural colleges have had no small part in fostering and developing domestic science.

A number of college women attempted last year to find out how many institutions had put some form of this work into their courses of study. Questions were sent to eighty-nine institutions. The answers showed that fifty-eight had some form of the work. Twelve had regular domestic science courses and four were about to start them. So much for the history in outline. One may say "behold how great a matter a little fire kindleth."

We come now to consider the second question, What do you mean by Household Science? One has said it includes a study of the agents, the materials and the phenomena of the household. One needs to pause a moment and repeat the words to appreciate the largeness of the subject. The agents, heat, light, sound, electricity, color, the materials, the air we breathe, the food we eat, the water we drink, the houses we live in. Ah! who will complete the list?

It is well to remember that principles are universal, while their applications are special and peculiar. The general laws of heat are as true for the modern range as for the steam engine.

The painter, the decorator and the dyer have each a technical interest in color, but the woman who would give beauty and personality to her home by a harmonious blending of color can not disregard these same principles.

By household science we mean very largely applied science. Just at this point it seems to me is the weak spot, perhaps it were better to say the uncultivated field in the education of women. Our colleges for men long since recognized the value of science and its applications. This fact is illustrated by the increase of our technical schools until they number over sixty, and the students in technical courses of college grade number over 20,000 young men.

You farmers know the benefit science has been to you and you are sending your boys to the agricultural colleges to learn the principles of physics, chemistry and bacteriology that you may have their help in your soil work and in the dairy.

Women have been rather slow to recognize the close relation science sustains to the affairs of the home, and by some strange oversight provision has not been made for them to apply their science in a kingdom peculiarly their own. Is there any good reason why the girl should not apply her knowledge of chemistry to bread and of bacteriology to the processes of fermentation?

I am co-educational enough to believe, generally speaking, that that system which proves most successful in the training of boys will have a similar result with their sisters. I believe it is our privilege to profit by their experiments. They have tested successively the classical school, the manual training school, the technical school, and our universities stand today because men have felt that the highest development, the truest unfolding of the human spirit was to be accomplished not by any one kind of school but by the correlation of the best elements of each.

This brings us directly to our last topic, The province of household science in a state university. I answer: To provide a place and an opportunity for the correlation and application of the arts and sciences to the home. I know of no one place which affords so many opportunities for the application of science. Neither do I know of a place more fateful for good or evil in the life of the individual or the nation, than the home.

As the equipment and advantages of the university greatly exceed those of a single college, so are the opportunities for the household science department greatly multiplied. In no other institution, to my knowledge, can the department have the inspiration and help of expert workers in so many different lines, as well as the advantage of illustrative material of so many different kinds.

The college of science can reveal to the students some of the mysteries of the laws of life. The college of liberal arts can give them a truer conception of their own place and work in the world by a study of the history and literature of other peoples and tongues. The eye can be trained to recognize

beauty of color and outline and the hand to express it, by the work in art and design. The architect and the decorator can show how to construct and adorn "the house beautiful."

A wise selection and correlation of work in these various lines, with the special work of the household science department affords an unusual opportunity for that symmetrical development so greatly to be desired in educational training.

FARM HOUSE ARCHITECTURE.

By James M. White, Associate Professor of Architecture, University of Illinois.
Read before the Domestic Science Section of the Illinois Farmers' Institute.

Hallam in his "History of the Middle Ages" says: "No chapter in the history of national manners would illustrate so well if duly executed, the progress of social life as that dedicated to domestic architecture." Scanning history by centuries we recognize the truth of this quotation but adopting a shorter measure of time advance is not so evident.

To obtain a correct idea of the status of Farm House Architecture we must first admit that in fact it is not so much a matter of art as of business. I have seen, this side of the Missouri river, farm houses with lean-to stables against them, and I have seen other structures in which the animals were housed on the first floor, the family on the second, while in the loft above were stored the hay and grain. These may be no more common than is the steam heated farm house supplied with hot and cold water in its bath room; but these extremes show us that unless we pick our typical house very judiciously, we may find that progress in farm architecture has not kept pace with that in social life nor with the rapid advance along all other lines of rural development.

It is impossible to ignore the influence of so unarchitectural an element as money in the development of American architecture and that it is present, as a fundamental factor, is one of the facts to be noticed in the present discussion. If our prosperous farmers made their homes on their farms instead of in cities, if they felt under obligations to maintain an interest in the welfare of the communities in which they have made their successes and to remain there and erect dwellings commensurate with their means, instead of building small tenant houses, disproportionate in size to the other farm buildings, then would the farm house be more a matter of art. Nevertheless, it is in the design of country homes that American architecture has achieved one of its greatest successes, because out of town architecture is almost wholly free from the restrictions and limitations which make the application of architecture in our cities so difficult and complex.

In order to systematize the investigation of the farm homestead the following topics will be briefly considered in order:

Site, aspect, exterior effect, planning, heating, lighting, and sanitation.

In the first place the house must be adapted to the site chosen. A plan may be admirable in itself and yet unsuited to a particular spot or out of harmony with the surrounding scenery. If a building's sole claim to artistic approval rests on its correct relation to the landscape around, that fact alone insures its builder a very honorable place among modern architects. "Rural Architecture," it has been truly said, "is the creation of a picture of which the landscape is the background; and the design is good if the view of the building and its environs from several points makes a good picture." In moderate sized holdings, a clear space of from one hundred to two hundred feet between the house and the highway, with width equal to or exceeding the length, will give room for a few shade trees and an ample grass plat. The site must be well drained and the house should be, if possible, on higher ground than the barn so that no wash or seepage may tend toward it. One hundred feet is the minimum distance which should intervene between these structures except in a very cold climate where the house and barn may be connected by a covered way which, however, should be so constructed that it can be pulled down in a few minutes in case of fire.

Aspect—First, the aspect due north is apt to be gloomy because no sunshine ever cheers a room so placed. Secondly, the aspect due east is not much better because the front rooms are not usually the ones occupied during the morning hours. Thirdly, the aspect due west is intolerable from the excess of sun dazzling the eye in the room where one's afternoon leisure is spent, but if we face our house to the south, we have the most desirable aspect for the principal rooms; the dining room can be located on the east where it will receive the morning sun and thus but few rooms will be left to receive only west or north light. An added advantage might be obtained by fronting towards the southeast, which would let sunlight into all windows at some time during the day. It would also admit of a front porch sheltered from the evening rays of the sun.

Exterior effect—Of the common forms adopted in house building the square is the most economical in point of outside wall, allows the most compact arrangement of rooms, and is most readily heated; but it can not easily be made picturesque, an advantage which the winged form in its various modifications does possess. Story and a half houses are usually the most picturesque and they furnish at a minimum expense the minimum amount of bedroom, but they are too uncomfortable in hot weather to be tolerable in this latitude. All apartments should have a well ventilated attic between them and the roof.

It is economy in first cost of building material to build a house of two or more stories, because roofs and foundations are expensive items. But it is bad enough for people who live in cities to suffer from the disadvantage of stairs without inflicting the same evil on people who live in the country, where economy of ground counts for nothing. I am well satisfied that a properly constructed one story house with a good cellar underneath, and on dry soil, is just as healthful for lodgings on its lower floor as a higher house is upon its upper floor. The economy is only in first cost of building material, and through all after years, there is a serious waste of effort to all in the family who are compelled daily or perhaps hourly to ascend to an upper story to perform necessary household duties. These are the practical considerations that tend to produce the comfort which, after all, is the essential quality of home.

But it is not enough that a house should possess material comfort; it must also appear comfortable, and the eye must be soothed and satisfied as well as the body. The simplicity, repose, and absence of all straining after effect, which mark good work, are rarely to be met with, and they are often replaced by a striving for originality—for the new thing of today, which, tomorrow, will be hopelessly out of date. The very term artistic has become so associated with work which is aggressive in character, that one hesitates to use it in connection with quiet and unassuming design.

In architectural practice the presence of so much superfluous if not possibly bad ornament, can be attributed to no other cause than the belief that beauty is a thing of decoration and non-essentials. Any house may excite attention by what people are pleased to call "originality," eccentricity, change for the sake of change. Almost any architect if he be audacious enough—perhaps it would not be wrong to say ignorant enough—may obtain notoriety; few obtain fame. It is a very good plan to take as a working rule, that all mere ornament is to be viewed with suspicion. Owen Jones' advice, "Decorate your construction, do not construct your decoration," holds a still greater truth—that given the right artist, the construction may be in itself sufficiently beautiful to require no added adornment.

The cry for an American style of architecture, in any proper sense, can never be satisfied. The fundamental principles which enter into the different styles possible, are already known; not that today ideas are lacking in our work, but simply that the possible ways of building and ornamenting are limited and their essential features are already known. The best we can hope to do is to take some of the older styles and adapt them to the requirements of our American environment. Absolute originality is not the chiefest of architectural virtues and can only be obtained by absolutely disregarding historical precedent. Because style is the outcome of the genius and study

of great minds, the result of the best intellects and the best thought of periods when certain standards were lived up to and made lasting, should be sufficient reason for young architects to lay aside the striving for absolute originality. An author has humorously characterized one of the results of the Eclectic School of Design, as a "kaleidoscopic house in which are assembled a Queen Anne stoop, a Dutch gable, a Tudor window, a Gothic capital, a Flemish dormer, a Hanseatic carved impost, a zigzag Norman arch, a Venetian lion, a Byzantine dome ceiling, and a pierced Moorish screen from the Alhambra." He concludes with the remark, "Behold the science of clustered bits, assembled by bands of brass or brazen effrontery to image the new house of modern times." Outside a fancy dress ball, no one dreams of masquerading as a Tudor or a Plantagenet, or even as a gentleman of the time of Queen Anne. We are men of today. Our houses should be houses of today. We need not ignore the past but let us catch the spirit of the best old days, and let the letter go—that "letter" which is so dear to many who have never felt the spirit and who make in architecture the mistake that Browning's duke made in life: "All that the old dukes had been without knowing it, this duke would fain know he was without being it." Seek first construction, and if it be the only factor considered, the result will often be not unsatisfactory. An experienced architect will give you first a sanitary, substantial, and comfortable home and in doing so, with no extra expense but often with a most unusual economy, will manage to make a really artistic building at the same time. In such houses you can discover that there is neither gothic nor classic architecture, but house building pure and simple.

Planning—But it is not alone to the outward embellishment of the country home that art and taste should be directed. The influence of these should be shown as well in the internal arrangement and adornment. Two unfortunate characteristics of modern planning are multiplication of rooms and isolation of the several parts. It is questionable, however, whether such a multiplication of the number of rooms all free to the family and visitors adds anything to the true comfort of life. We can, after all, only be in one place at a time. Empty rooms make a dreary house; nor do a great number of public rooms contribute to privacy, so it is better with the increase of the household to increase the size rather than the number of public rooms. If one examines the average modern house, it will be found to consist of a series of rectangular boxes. These are the parlor, dining room, sitting room, etc., and when the house is small these rooms are correspondingly contracted, till the minimum size and maximum of discomfort are reached, and one often finds all the family crowded into one of these rooms. The logical reversal of this is to have as the dominant feature of the plan, a central hall or living room which should have as much floor space and be as large and airy as funds permit. Such a room would meet a real and substantial need, and with it as the keynote of a home, it follows naturally that one must group round this the various other rooms which may be required by the family and these may be regarded as mere appendages and dependencies of the living room, not pretending to compete with it as rooms but rather becoming merely recesses, each specially modified for its particular function in domestic economy. Some of these may indeed be left quite open to the living room without any more substantial division than a curtain; but others from the nature of their uses demand a more effectual screen from sound and sight. However, these will not necessarily be so large as if they formed units in a series of small rooms. The obvious adaptability of this large room to festive occasions must be recognized, for it, with its grouped dependencies, exactly meets the requirements of the case.

Careful consideration should be given to the relation of the public and private parts of the house. Perhaps the most important of these questions is the due relation in the house of the family rooms to the servants' rooms. Under ordinary conditions of modern life these two separate communities must be accommodated under the same roof, with due regard for the comfort and privacy of each. The following quotation from Kerr's "The Gentleman's House" applies equally to farm hands and servants. He says: "The sleeping rooms of the domestics have to be separated from those of the family and indeed separately approached. The idea which underlies all is simply this:

The family constitutes one community; the servants another; whatever may be their mutual regard and confidence as dwellers under the same roof, each class is entitled to shut its door upon the other and be alone."

In this connection it is not enough to consider the position of the rooms alone, but it is equally important that the various routes taken by the family and the servants should be an object of study and should be kept as distinct as possible. The study of routes indeed, forms one of the most essential features in planning a house; but it is only in large plans that a complete separation is possible. In a city house, the serving pantry isolates the kitchen from the rest of the house and a servants' staircase adds to the privacy of the front hall. I never have been able to see why these necessities in a city house are not decided advantages in a farm house.

Eight rules for guidance in planning were published over thirty years ago in an English book, entitled, "The Grammar of House Planning," and I agree with the author so fully that I quote them here:

"1. Let the kitchen (the most important apartment) always be on a level with the principal floor—and for strong light and free ventilation, it should have if possible, windows on opposite or nearly opposite sides.

2. The pantry or dish closet should be between the kitchen and dining room and easily accessible from both.

3. There should be a set of easy stairs from the kitchen to the cellar and also an outer set into the cellar for admitting barrels, etc.

4. More attention should be given to the arrangement and disposition of such rooms as are in constant use, than those but occasionally occupied. Hence the kitchen and living room should receive more attention on the ground of convenience than the parlor.

5. Every entrance except to the kitchen should be through some entry or hall, to prevent the abrupt ingress of cold air, and for proper seclusion.

6. Let the entry or hall be near the center of the house so that ready and convenient access may be had from it to the different rooms; and to prevent the too common evil of passing through one room to enter another.

7. Place the stairs so that the landing shall be as near the center of the house as may be practicable, for the reason given for the preceding rule.

8. Let the partitions of the second floor stand over those of the lower, as nearly as may be, to secure firmness and solidity."

Heating—In designing a house it must also be remembered that it must prove a comfortable haven under absolutely opposite conditions of weather; but as indoor life is so much more essential in the winter than in the summer, it will be well to consider the house rather as a protection from cold and storm than from heat and sunshine, and each room should be designed with a view to its possible comfort under the most trying conditions. Let there be in one room at least a fire place where the family, particularly if there are children, can gather round and watch the flickering flame of the hickory log or, for the lack of that, the bituminous coal, and by all means let that fire-place be generous in size. It is not often that we see the rousing wood fires of a former generation. They are no longer an actual necessity for modern science has introduced many other methods of circumventing the searching blasts. But if these open fires are no longer a necessity as a means of affording warmth, are they not necessary as promoters of ventilation, cheerfulness, and gladness in the household? Let every man then, who builds a house, particularly if it be in the country, see that he has at least one open chimney place, or grate, for either wood or coal. If he has any desire that his children shall ever have happy associations with home, and that in after years their thoughts shall revert with pleasure to the scenes of their youth, let the family fireside be something more than a name.

The fallacy that high rooms constitute healthful rooms has led to the spoiling of many a house. High rooms necessitate high staircases, high doors and windows, and volumes of cold air. Spaciousness and ample superficial area are essential qualities in a good room, the effect of which excessive height tends to limit and destroy. Let it be remembered that to make rooms health-

ful you need circulation of air not space for foul air to collect in. An eight-foot room may be better ventilated and more comfortable to live in than a room twelve or fifteen feet high, and it is certainly more easily lighted and warmed. Time was when our dwellings and public buildings were so constructed that ventilation existed as a matter of course. The doors and windows rattled with their looseness. The broad fire place sucked up and carried off the foul air as fast as it was generated. Now, we make our doors and windows tight and overheat our rooms with stoves and furnaces. This perfected construction has made some system of ventilating necessary. But before considering this subject, it will be best to review briefly the four methods of domestic heating in general use, together with their advantages and disadvantages.

The fire place has the advantage of being very cheerful; it is too, a fine center for decoration, and produces excellent ventilation for a moderate number of persons, say five or six; and low fires may be maintained in spring and fall when required. On the other hand, it is dirty; most costly in use of fuel for heating; does not warm a room uniformly, and creates cold drafts unless warm air is supplied from a furnace.

The most common method of heating houses is by the hot air furnace. This is simply an improved stove placed in a small enclosure, the sheet iron or brick casing being the walls. The furnace heats the air within this enclosure and it rises to the rooms above through the tin pipes. To keep this current of hot air rising, a cold air box connects the lower part of the furnace with the outside air, and this box is generally provided with a damper with which to regulate the supply of air to the furnace. This box should always be kept open as much as possible, and should never be entirely closed while there is a fire in the furnace, otherwise the furnace will become overheated, the fire pot broken, and some rooms in the house will become cold because the furnace is taking its air from them instead of from the cold air box. Regulation of cold air supply is not an easy matter as the heat of the furnace is constantly changing, requiring a greater or less supply of air to properly warm the house. The common expedient of taking the air supply entirely from within the house and re-circulating the air to be breathed again and again, can not be too strongly condemned. The cold air duct should have, according to Willett, "an area in square inches equal to forty times the number of bed rooms in a residence." The number of bedrooms is a fair criterion of the number of occupants of the house and therefore the amount of air needed for ventilation may be expressed in terms of bed rooms. Allowance is also made in this formula for the vitiation of air by lights.

The following points should be considered in arranging pipes and registers:

1. Set the furnace so as to make all pipes to the first floor of nearly equal length, making those to the north and west the shortest.
2. Make these pipes as short as possible and give them one-half inch to the foot rise.
3. Vary the section of the pipe with the size of the room or the number of people.
4. Make second story pipes with an area equal to one-half or five-eighths that of pipes to similar rooms on the first floor.
5. Registers should have double the area of the hot air pipe to reduce velocity of incoming air and allow for the grating.
6. Double tin pipes should be used in the walls, and basement pipes should be wrapped with asbestos.
7. The cellar should have a height of seven feet to properly install a furnace.

The advantages of furnace heating may be summarized as follows: Cost of plant less than stoves, about half that of steam, or five-eighths that of hot water; much less trouble than stoves; will burn soft coal better than stoves, and while warming the building it supplies abundant warmed fresh air for ventilation.

The disadvantages are: That air is overheated and too dry, if furnace is too small or air supply insufficient, and furnaces out of repair may let gases leak into the hot air chamber.

The steam boiler distributes steam at a low pressure through iron pipes to radiators in various parts of the house and the hot radiators warm the air of the rooms. With a boiler and radiators properly proportioned, the whole house can be kept at a uniform temperature for several hours at a time with

from one to five pounds of steam, as the automatic dampers, with which every boiler is supplied, can be set for any desired pressure of steam. Direct radiation warms in the same manner as a stove. Indirect radiation warms air which passes over it and into the room. There should always be some indirect radiation to furnish the necessary fresh air to a house. The advantages of the system of steam heating are, that it is the easiest system to install successfully; the cost of the plant is less than for hot water; the heat can be more quickly controlled than with hot water; pipes and radiators are smaller, and heat may be carried further. Its disadvantages are, that it is more wasteful of fuel than hot water; necessary repairs are more frequent; the plant is less durable and requires more attention than hot water, and it is often noisy.

The hot water heater is very similar to the steam boiler, except that all pipes and radiators are full of water instead of steam. The fire in the heater causes the water to circulate in the pipes and radiators, the radiators warming the air of the rooms as do the steam radiators. As the water in the heater becomes hot, it flows up through the pipes and as it cools flows down other pipes and returns to the heater again. The only guide for the regulation of the heat in the house, is the thermometer on the heater, but with a little experience it is possible to obtain an exceedingly uniform temperature with the minimum attention. The advantages of this system have been indirectly stated in giving the disadvantages of steam heating, and where first cost is not prohibitive, it should always be given the preference for residence heating.

The pre-eminent advantage possessed by the furnace is that its heating power depends upon its furnishing a large volume of air, and if the cold air duct from the outside is fixed so that it can never be completely shut off, there will always be fresh air for ventilating. With other methods of heating, the necessary supply should be brought in through indirect radiators that it may be warmed so as not to create unpleasant draughts. Ventilation is needed at all times, but atmospheric conditions materially affect the regularity of its operation. When the thermometer is at zero and a gale is blowing, there is no doubt but that ample ventilation is being provided for the usual number of occupants through cracks and open joints, and even through the building material itself of isolated dwellings. At other times when the air is milder but open windows are not yet comfortable, when there is no wind, and smoke will hardly rise, how are we to expect any interchange of air through plaster and building paper and inch boards? Then is when the heating apparatus which forces a change of air should be appreciated.

It can be demonstrated that each adult requires about 1,800 cubic feet of air per hour for good ventilation, and that the lighting apparatus used by him will vitiate to an equal extent about the same amount of air. Therefore, for each person we should bring in 3,600 cubic feet of air per hour, or one cubic foot each second. The entering velocity of air through a first floor register over an indirect radiator is at least six feet per second, so that twenty-four square inches of cross section in the pipe leading from the radiator to the register, and about the same in the fresh air duct to the radiator, will be required for each occupant. For steam radiators it may generally be assumed that there must be one square foot of radiation for each square inch in cross sectional area of the duct leading from it, and that for hot water there must be about fifty per cent more radiation than for steam with the same area of duct. The air thus brought in will disseminate through the house, some getting upstairs and leaking out through windows, and some finding exit through fire places, which it is desirable to provide for the purpose.

When there are not one or two good fire places, tin ducts may be run in the partitions from registers in the baseboard, all to be united in the attic to a duct terminating in some standard form of galvanized iron ventilator on the ridge of the roof. For summer ventilation registers should be placed at the ceiling instead of at the floor. Owing to the small cross section and length of these ducts, it is not wise to rely on a velocity exceeding four feet per second, which would require about thirty-six square inches area per person. Houses as now planned open together so freely that it is not necessary to provide a larger vent for any one room than can conveniently be put be-

tween the studding, and several should be located so that the fresh warm air supplied by the indirect radiation will have to pass across the occupied spaces of the house.

Lighting—The methods of gas lighting for isolated buildings have not yet attained the confidence of the public to the extent that has been accorded to all classes of heating apparatus, and yet some gas machines requiring no more care than a single lamp will safely generate gas enough for the illuminating of an entire house. It is the first cost that proves the stumbling block.

Gasoline and acetylene gas are the two products between which you must choose and in either case permits must be obtained from the insurance companies. Gasoline gas lighting has been practicable for thirty years. Acetylene is hardly past the experimental stage. It is entirely safe and practicable with proper generators and intelligent handling, but without both it may be very dangerous. Mixtures of air and acetylene, running from three to eighty-two per cent acetylene are explosive, while with coal gas, the explosive limits are eight to twenty-eight per cent gas. No form of generator should be used which does not automatically prevent any air from getting into the system. Both these gases are distributed through regular systems of gas piping and the gasoline gas is burned with the same burners, including the Welsbach, as coal gas. Acetylene requires special burners.

It is difficult to compare the cost of operating the two systems because the price of the carbide and gasoline both fluctuate. The price of gasoline is fixed by the Standard Oil Company, and there seems to be no reason to doubt that they are making a satisfactory profit on it at the present price, and that it should go no higher. At present quotations, the price of gasoline gas would be about 75 cents per thousand feet, which is about half the average price charged for coal gas. The first cost for a first-class fifteen light gasoline gas machine is about \$160.00. Freight, installation and gas piping will add about \$50 to \$55, and the chandeliers are still to be added, making a total first cost of about \$230 to \$280. The acetylene generators are but about half the cost of the gas machine, the other items would not vary much.

Two tables are here included giving relative cost of coal and acetylene gases, and electric light. The first column under each authority gives the cost per hour for ten candle power, while the second column gives the comparative cost with acetylene as one.

	COWLES: PROGRESSIVE AGE 14, 200.		WOLFF: ZEITSCHRIFT FÜR ANGEWANDTE CHEMIE 1898, 932.	
	Col. I.	Col. II.	Col. I.	Col. II.
Welsbach.....	.12 cents	.6	.058 cents	.2
Acetylene.....	.21	1.	.26	1.
Incandescent electric.....	.53	2.5	.55	2.1
Gas, flat flame.....	.79	3.8	.47	1.8

Even if these experiments agreed perfectly they could not be considered to represent the conditions of actual practice for they are based on equivalent candle power and it is almost certainly true that as soon as a brighter illuminant or a more convenient one is at hand, we are no longer content with the light furnished by one or two gas burners or lamps and use the same number of acetylene burners or electric lights.

The Welsbach burners give a much brighter light than the common burners with a smaller gas consumption, but the expense for mantles and chimneys begins at once and usually continues with vexatious regularity so that this item must be added to the gas bill at the end of each month, before drawing conclusions. But taking all things into consideration, the Welsbach gas flame will undoubtedly be found the cheapest, with electric light usually at the other extreme.

Gasoline gas has a decided advantage over acetylene and electric light, where only one of the three can be had because of its availability for cooking and heating.

Sanitation—Under this heading must first be considered the water supply. For domestic purposes it should be rain water stored in ample cisterns having good sand filters. It should be pumped to an elevated tank as required that it may circulate to the kitchen, laundry, and bath room. If there be no power pump on the premises, a ten dollar hand pump operated ten minutes a day will maintain the supply. There should be a thirty gallon range boiler connected to a water back in the range, laundry stove or house heater, that hot water may always be in readiness for laundry work, bathing, and kitchen purposes. The extra outlay is returned in the economy of labor and the small amount of effort that is needed in pumping is but a fractional part of that saved. Every farmer should have some power pump to furnish water for stock and the same apparatus will serve for the domestic water supply, lawn sprinkling, and fire protection.

For pumping alone the windmill, hot air engine, gasoline engine and sometimes the hydraulic ram have their several advantages. The gasoline engine is pre-eminent if it is desired to have a power which may be satisfactorily used for pumping, either from a deep well or for a suction pump to deliver water under direct pressure or to run a small grinder, a corn sheller, feed chopper, churn, washing machine, wood saw, or even a dynamo for electric lighting.

In selecting any kind of machine for farm use, recommendations should be given the most weight which come from farmers who are operating under similar circumstances. A machine serviceable in a city where skilled mechanics are always at hand to repair it and where no one but a person skilled in its construction would think of attempting to tinker with it, may be a total failure on a farm. I have often been amazed at the mechanical skill and proficiency of farmers, but I have also seen many who are not conversant with the fact that it is dangerous to "monkey with a buzz saw." I read an article recently entitled, "The necessity for making gas machines fool proof," and I think the policy might be extended with advantage to a wider enumeration. Nevertheless there is no domestic comfort available in the city which can not be safely obtained on the farm.

The cost per horse power per hour for a gasoline engine is often placed by manufacturers as low as 1 cent, but it will be safer to say that it will not exceed 2 cents. A 3-horse power gasoline engine costing \$160 at the factory and \$4 to \$6 more for belting, will run to its full capacity at a cost of 6 cents per hour, and when running at but a fraction of its capacity, the cost will be proportionately reduced. A gas engine either takes an explosion only when the velocity is reduced to a certain minimum, or else it explodes regularly, but only takes enough gasoline at each explosion to generate the power needed. The latter type of gas engine is the only one available for running a dynamo for electric lighting; for those controlled on the hit and miss principle vary too much in speed. A 20-light dynamo of moderate speed would cost about \$80.00 and a slow speed one ten to fifteen per cent more. In addition to this, there would be required a switch board, volt meter, lamps, fixtures, and wiring. The cost of installation supposing the power to be at hand would be less than for a gas machine and would be the most sanitary and convenient light possible in the house. It would be considerable trouble however, to go out and stop the engine after everyone else had gone to bed, besides the light would not be always available as would be the case with gas.

A discussion of sanitary plumbing fixtures, traps, vents, etc., in the brief space that could be devoted to it here would not be worth while. What I could say without entering too deeply into the subject has been heard or read by you all, and it will be much better for you to seek further knowledge in some of the books cited in the excellent bibliography printed in this Association's report of a year ago.

I wish, however, to raise the query in your minds as to why ice is not used more on the farm. It is an article considered indispensable by many and those who have enjoyed its use are unwilling to do without it. It materially increases the comforts of the house and an abundant supply is a delight.

On many farms there is a drainage ditch or stream which could be dammed to make a small pond. From it the ice could be cut and put away for 50 cents a ton, allowing good wages for all hands. Any ice man will sell ice for \$2 a ton in the cutting season and the expense of hauling, to the farmer, at that season of the year would have no cash value. Where ice is cut on a large scale along rivers it is put up for from 7 to 35 cents per ton.

Fifteen to twenty-five tons would be a good supply for domestic purposes, and the ice house may be very cheaply constructed. Thorough drainage is essential; the walls should be double and a space eight inches to twelve inches wide between the ice and the wall should be packed with wet tan or saw dust. The ice must be closely packed, chinking up with small pieces of ice or snow, and ventilators must be provided above it.

Estimating—In closing I wish to give a little advice on estimating cost. When people begin to figure on how much they can get for a certain sum of money, they are invariably disappointed because they have assumed that if a house can be built in Minneapolis for the given sum, or was built in their own vicinity eight years ago at the same cost, that it can be done now; as a matter of fact it will cost at least 20 per cent more today with no immediate prospect of much reduction. Published plans are responsible for this tendency to error, but can not always be blamed, for estimates may be correct for a certain locality, or if a building has been built for a stated amount it may have been at a past time when material and labor were very much cheaper.

A simple and rapid plan for estimating the cost of any building is by comparison. If carefully done it will give figures that may be relied upon. It would be unwise for me to attempt to name prices, when they differ so much all over the State and are changing from day to day. Select a house already built in your vicinity which represents in construction and finish about what you desire to build, and find out its cost. Compute the area of the ground covered and divide the number of dollars of cost by the square feet thus found and the price per square foot is ascertained. The cost of a similar house of a different area may be based on this unit cost. The house chosen for comparison should have been built the same season, if possible, so that prices of material and labor will be identical.

Any extras, such as heating, lighting, plumbing, etc., can be estimated separately and added to the first figure, if the house upon which the estimate is based does not contain them.

The practical principles to be considered in farm house construction as here presented by no means exhaust the subject, but I trust they will prove a guide to larger knowledge and a protection against serious errors.

THE EVOLUTION OF THE KITCHEN.

By Mrs. Elisabeth O. Hiller, Principal Chicago Domestic Science Training School.

The kitchen is all-important; the laboratory in which daily experiments are conducted. If we stand by an educated cook and then by an ignorant one we shall soon see why we are called a nation of dyspeptics.

I would build a kitchen first, then the dining room, the hall, the sitting room, the parlor, and what was left I should put into the reception room and guest chamber.

There should be plenty of fresh air and sunlight, for disease germs prefer darkness. Woodwork should be plainly finished, with few mouldings or projections; windows fully screened; walls tinted with a soft shade of green and freshly kalsomined; hard wood floor, or if soft wood it should be covered with linoleum, left unfastened for three weeks to allow for expansion. At the base board there should be a closely fitting quarter round. The sink and the table should be so high that there need be no stooping. A lower table may be used for kneading.

The sink should not be enclosed, as it then becomes a harbor for vermin. Paint water pipes white. Use fuel economically, and do not think that violent boiling cooks more quickly than a gentle simmer. Get the best stove you can afford; have some easy chairs and make the room look attractive. Art, science and intelligence are as important in the kitchen as in the parlor, and when the housewife does not recognize this she is at a disadvantage. Some proper utensils are necessary, but many may be improvised. Have your table in the center of the room. Have your daughters go into the kitchen to learn. We want domestic science in the public schools because it will make happier homes and fewer divorces.

THURSDAY EVENING, February 21, 1901.

This session was opened by music in the way of a chorus composed of the sophomore, junior and senior classes of the high school under the direction of Mrs. Constant.

The following selections were rendered: Day of Glory; National Hymn of Praise from Bellinis; Opera "Norma;" The Miller's Wooing, by Julia Goddard.

Mr. Chairman:—Are not you proud that you are a citizen of Illinois after listening to such grand music? I am, I can not help but feel proud after hearing that. Any one who is not proud of being a citizen of Illinois is not worthy of being one. We have the grandest State in the union and the best boys and girls.

The first speaker on the program this evening is Mrs. Henry M. Dunlap, who will speak to you on something about life in Paris.

LIFE IN PARIS.

By Mrs. H. M. Dunlap.

Paris with its wealth of art and its glory of fashion is a city never to be forgotten. A city with well shaded avenues, interspersed with narrow antiquated streets that lend variety and beauty to its general effect. A city noted for its cleanliness; its shade trees; its art students; and cabs. A city where its inhabitants of over two and one-half millions live mostly within a radius of twenty-five miles. A city which well might be termed the "white city" as the principal building material used is a white limestone obtained in the vicinity of Paris and often directly underneath it.

You all, no doubt, have heard of the famous mushroom caves of Paris that occupy the space made vacant by the stone used in building the houses and paving the streets of the city. They are miles in extent and are a source of considerable revenue to owners of the same, as the mushroom is a staple article of diet among the well-to-do Frenchmen. The culture of the mushroom has been brought to almost a state of perfection and people from all over the world visit these caves to learn of their treatment and mode of growth, for in no other place has so much time, labor and science been brought to bear upon the subject.

A city of well-clad, ever-going, amusement-loving people. During my stay of over four months I saw but two people who were poorly clothed; even those in very moderate circumstances were neatly and comfortably attired. Not entirely according to our ideas of comfort, for the women invariably wore low shoes or slippers and went bareheaded.

The Parisians are an art and beauty loving people as is everywhere shown by the money and effort devoted to beautifying and keeping clean their beloved city. The good example, publicly made, by the city officials, seems to have a reflex action upon every Parisian in creating a corresponding desire

for personal cleanliness and well kept clothes. It might be said that they go to extremes and spend more time and money upon their dress and personal appearance than is warrantable, for truly nowhere can be seen finer and more elaborate dressing than in Paris. I saw more over-dressing, more extravagance as to dress than I ever thought it possible to see. The French woman is not happy unless well dressed and promenading the streets or places of amusement to display her finery. She would not be guilty of wearing a short, sensible street dress, or neither would she be seen with a shopping bag attached to her belt. They are extremists in all things; their small waists, their high heels, and long skirts would seem to make life unbearable to them, but it does not. They walk and ride, laugh and talk, and seem to obtain much pleasure in life even while they are made uncomfortable by a too close adherence to the demands of fashion. I am glad to see the American woman possesses common sense enough that she does not think she must abide entirely by the dictates of Paris fashions; but can at least occasionally clothe herself in a practical comfortable street suit including low heeled shoes, shopping bag, etc. Less extravagance will be shown in the American woman's dress when she does not depend so much upon Paris styles and follows some original ones of her own, noted for their simplicity.

I feel that I am not prepared to speak of the economic or social conditions of the people, for in a few months' time one can learn but little in that direction; they can only see the general trend of things. The French are a people loving amusement. They spend Sundays and holidays, both summer and winter, in going to the parks, art galleries and museums. They certainly do not spend much of their time in their homes. In the evening the streets are lined with people going, one knows not where, but going they are.

The French woman is not expected to do the general housework that the American housewife of moderate means is supposed to do. Their kitchens are tiny affairs, hardly large enough to turn around in, but plenty large enough in which to cook and perform all that is required there in the individual home. The bread is never baked at home, the washing is sent out of the house, meat, cakes, their kind of pies, and even vegetables can be bought cooked ready for serving; so cooking in the Parisian family is mostly done on the co-operative plan.

My surprise was great when I viewed my first kitchen. It was not larger than six by eight feet, with a small, round, one-holed stove with an oven below where a roast not larger than four pounds could be cooked. A cupboard, small table and corner sink completed its furnishings, space was not granted for household supplies, consequently, provisions must daily be purchased and usually for each meal. Even in the best houses in new Paris the space allotted for the kitchen is very small. Fuel being expensive one can well see the necessity for one fire doing the cooking for many houses, and that the *charcuteries* or cookshop should be numerous.

The French *Dejeuner* or breakfast consists of coffee, rolls and butter. So with their French coffee pot at hand a fire for breakfast is wholly unnecessary. I believe many of the Americans could pattern after the French as far as simple breakfasts are concerned and be greatly benefited thereby.

The breakfasts are brought to the bedroom and by the French woman taken in bed. I do not know but what some American women while in Paris have been guilty of following this example and were not on the sick list, either.

Dejeuner a la Fourchette, or breakfast with a fork, is the noonday meal and corresponds to our lunch. It is always served in courses of never less than three and more often six. Dinner is served any time after six o'clock and is the meal of meals with the French people. Three or four kinds of meat and fowls are served with a limited amount of vegetables interspersed; always a salad with French dressing. The American who has not learned to enjoy the salad before going there, if his sojourn is of any length, will certainly do so. They have dandelion, chicory, romaine, cress, and lettuce in perfection of growth. It is to be hoped that ere long our American markets can be well supplied with these delectable vegetables as are the markets of Paris.

They have many kinds of cheese and for lunch it is always served as one of the courses, to be eaten with the French bread. They do not indulge in heavy desserts as do the English and Americans, but usually have fruits or some simple pudding to close the meal.

One is surprised at the amount of meat and poultry the French people of means indulge in, and also their liking for their sour wine which to the uncultivated American taste is not any better than diluted cider vinegar.

The French certainly deserve much credit in bread making. The bread is noted and well it should be. It is baked into loaves not more than four inches in diameter, varying in length from a foot to two yards. In their dining rooms you will see a tall basket which is the receptacle of these long loaves of bread and when needed, it is cut or broken; care being taken that not one piece extra is removed from the loaf. Their bread is sold by weight and measure yards. They have various qualities that are sold accordingly, and as it is all under government inspection it must be kept up to grade.

If the American housewife could have the advantage of bakeries conducted with the science, skill, and grade of work of the French bakery, it would certainly do away with the necessity of making bread at home. The most of the American bakers' bread should be strenuously avoided unless one wants all the family to have dyspepsia.

The French laboring man seems to be able to live on French bread with wine. I never saw one carrying a dinner pail for if not convenient to carry his bread and wine in pocket, he seats himself outside of one of the little creameries that are found everywhere and orders a simple repast. Wine and bread he always has, with sometimes a small dish of meat and vegetables of French concoction. The sidewalks are oftentimes almost blocked by tables and chairs in front of their restaurants and creameries, for the Frenchman must see what is going on and so he would rather eat his meals outside in the dirt and dust of the street than within where the traffic of the street is not observable.

The markets of Paris are the most noted in the world and it will repay any one to lose a few hours of sleep to visit *Halles Centrales* or central market from 4:30 to 7 o'clock in the morning for at that time you will see it in all its glory. It consists of ten pavilions intersected with covered streets, and covers twenty-two acres of space. Underneath are 1,200 cellars for storage of goods, lighted by gas. Through this immense market passed most of the food consumed by the teeming millions of people during exposition year. In ordinary seasons, France herself, very nearly supplies all that the Parisians demand. This year they were obliged to draw their supply of beef, fresh cheese and dairy products from Normandy, eggs from Hungaria and Russia, and Germany. North sea fish, and tons of beef from the United States and South America; the American beef going by the way of London and Liverpool. Green food and poultry France alone was able to supply.

A system has been perfected by which the food is brought to this central market between the hours of midnight and early morning. As you know, it is a walled city, and at all roads or turnpikes entrances to the city are gates, where every article of food entering the city must be passed upon by the custom house officials, and it is said that not even one lone fish can enter but what it must be accounted for and add its share to the tax or octroi of the city. From this tax the city receives means to beautify and keep clean its boulevards, parks and streets, and also is able to spend millions of francs for decorations and illumination on their principal holidays, or fete days.

I had the pleasure of seeing on several occasions, rows of these vegetable carts entering the city wending their way to the market. It was a picturesque sight with the drivers with their sabots and blue blouses and the immense Norman draft horses harnessed tandem to their high two-wheeled carts. These carts or two-wheeled vans were piled high with cabbage, radishes, lettuce, onions, and carrots, as carefully placed and arranged as a bouquet of flowers might be for one's admiration. In all the markets women are in full control performing the labor with cheerfulness and skill. The meat markets only being left to the men. The meat markets are an artistic sight to behold.

Their pyramids of well trimmed chops with cut white paper on every well scraped bone. The legs of mutton or ham being hung within fancy white paper and the carcasses of beef protected by finely laundried napkins. Still more marvelous is it to know that cold storage facilities for meat do not exist in Paris, neither do the markets and individual meat shops possess refrigerators. The atmosphere is such that it does not seem necessary. Nearly every vegetable known to the American market is found here and many that are not, or if known, not cultivated for use. You may look the market over and you will never see a booth with its pile of roasting ears or barrels of sweet potatoes, two articles not included in the Frenchman's dietary.

It was the second day of June that I visited the wholesale market and while attending the sale of fruit by auction I saw strawberries sold, eighteen in a case, 7½ francs, making each strawberry cost 8½ cents. Cantelopes for 10½ francs, or \$2.10 each. A friend the early part of April was passing a very fine fruit store when he saw strawberries in the window and thought he would inquire the price. He was told they were 1½ francs each or 30 cents, and they were for Count Boni de Castellaine who was to entertain at dinner that night. There are twenty wards or Arrondissements in the city and in each one is a market location set aside where for two days in the week a market is held. They make grooves in their stone sidewalks in which poles are set upward and to which they attach their booths and by 5 o'clock in the morning a market is in full blast where only the night before was a thoroughfare. At 4 o'clock p. m. they must close their booths and in an hour's time all traces of the market are removed and the sidewalks and streets flushed with water.

The Parisians are an amusement loving people ever seeking, apparently, outside of their homes their enjoyment. The parks, avenues and boulevards are crowded with people on Sundays, holidays and evenings. The rich with their fine turnouts and the poorer classes occupying bus, tram, cabs, or walking. It certainly did not seem that a Frenchman could ever have nervous prostration caused by close application to business, without sufficient recreation.

The Sundays on which the fountains play at Versailles immense crowds go out until you would think every inhabitant of Paris was there; but again if you are at the Bois de Boulogne you will think the same and wonder where they all came from. They have their boat racing, pigeon shooting, merry-go-rounds and every kind and variety of amusement on Sundays, more than other days, for to the Frenchman the term "day of rest" means a change of scene with something to amuse.

When you visit the environments of Paris made famous and beautiful by the extravagances of kings and emperors at the expense of the people you do not wonder that at last the people rose up in rebellion and that a revolution and Commune were possible. Out of all this some good has resulted to the French people, for Versailles, Saint Cloud, Vincennes, Fontainebleau with their palaces and parks now belong to the government, or people, and are kept in perfect order and beauty for the people to enjoy, from the richest to the lowest. You will see the man in peasant garb with his family passing through these immense palaces, with their miles of art galleries, enjoying and studying the art that today makes Paris great. He then passes out into the surrounding parks, seats himself upon the grass and partakes of his lunch of wine and bread. All this beauty and glory was designed only for kingly enjoyment, but the people spoke and it was theirs.

Out in the vicinity of the petit Trianon at Versailles you will see where Marie Antionette and her court ladies played the peasant life and had their little "hamlet" of nine or ten cottages. They had every facility for playing dairy maid, and the water wheel that supplied water for the dairy is still to be seen. The beauty of Versailles and Saint Cloud parks with their fountains can not be described and neither can one understand and scarcely believe the tales of the extravagance of Louis XIV and XVI until your eyes have beheld the results.

It is surprising how little it takes to amuse a Frenchman. I had heard much of the ginger bread fair and so went to see it. It is held on the Place de la Nation and continues three weeks. The streets or avenues leading up

to the Place for several blocks are lined with booths containing every conceivable article for sale, but the principal article in every booth is animals of various kinds made out of ginger bread. When buying one they ask your name and then with melted sugar write it upon the animal purchased. You could see all, old and young, enjoying the pleasure of having their name placed upon the side of cow, hog, horse, or sheep. One taste of the ginger bread is sufficient for ever afterwards. The circle or Place as it is called is mostly reserved for their numerous merry-go-rounds. I think there must have been twenty-five or thirty, and no two alike. There were those of the giraffe, the lion, the horse, the camel, the dog, in fact almost every animal known with also an automobile and bicycle one. It was well worth the hour's journey to see the merry-go-rounds with their occupants, for again you would behold the gray haired man or woman of sixty seated alongside the youth of five enjoying the speed of the merry-go-round as keenly as the one of tender years.

Target shooting was another favorite sport and an endless variety was at command. You could shoot at the man or woman of color, the bride and groom, the society girl and her beau, or balls of various colors or various articles and then the one being hit yours, etc., etc. I wondered what the owners would do with their various outfits after the fair was over, but I discovered what they did before I left Paris. They are like the market women, they move about going from place to place in the city, for street fairs of various kinds are located annually in various parts of Paris and its environments that seem to give employment to them the year around.

One naturally feels surprised and more often annoyed by the transportation facilities of Paris where the millions of people have only the slow-going bus and almost equally slow compressed air tram to transport them to various parts of the city. Those in the vicinity of the River Seine have the delightful bateaux or screw steamer which plies the river between stations but a short distance apart, running every few minutes at a very small cost.

Imagine a Chicago man with his wife, or even a man from Savoy, standing with numero in hand where they have already been waiting fifteen minutes and find as the conveyance arrives, that his wife has a seat, but he is left behind, what his ideas must be of the Parisian methods. I have seen such a thing as a wife jumping off, after the swift-going bus had started, rather than to be separated from her husband. After knowing better the nature of the Frenchmen I saw that their system was necessary to protect the weaker vessel; for whether man or woman, they can only enter bus or trams according to the numbers they hold in hand. These trams or buses take on passengers at their stations which are some distance apart and where numbers are obtained.

The Paris cabman is ever present and if one has any love or sympathy for the horse, life is sure to be made miserable during his entire stay in the city. One's fear of the "cabby" is well founded, if personal appearances produce fear, for the majority are repulsive to the extreme, to gaze upon. For every ride a la course, as they call it, the cabby expects you to give a *Pourbois* (drink money) which must not be less than twenty centimes or four cents, and that they spend in wine and liquor. This may account for their careless and cruel driving, for as we well know, liquor changes a human being into a brute, without apparent love or sympathy for anything.

It is said that Paris is a heaven for the dog and a hell for the horse, and from what I saw it is certainly a very true saying. It appears that a couple of American women deeming the condition of the horse in Paris worse than they found it in America, started out this exposition year to see if they could do anything to alleviate their sufferings. I found them occupying a small space in one corner of the Agriculture building where they were faithfully and earnestly endeavoring by word and the passing forth of literature upon the subject to inculcate into the hearts of the people a little regard and sympathy for the horse. I have since learned that these same women gave a banquet to the cochers or cabmen of Paris, and after they had made them in a happy frame of mind, by first feeding their stomachs, they then made an appeal to their better nature by presenting the cause of the horse as they saw

it. As a result of all their work a humane society has been formed that is already doing much practical good, and encouragement is felt that the good work will continue.

In direct contrast to the condition of the horse is that of the dog. I do not believe I saw a poorly fed or neglected dog in all the streets of Paris. I there learned why it is, of recent years, that some American women would rather fondle a dog than a child. They want to be Parisian in their tastes. You would among the wealthier or better class of people invariably see the women with a dog attached to them by a chain or cord, and if promenading the streets, a whip in hand to ward off the attacks upon the dog of her affections by other dogs. You may know what love and affection is awarded the dog when I tell you that in the midst of that great city where land is of fabulous price, they have a dog cemetery, where the dogs are laid to rest with the care, form and unction given to human beings.

These same women that walk and ride with their dogs for companions would not deem it proper to be seen walking or riding with their children unless accompanied by a nurse. It is very seldom you see a child alone on the streets of Paris. They are not allowed to roam at will, but are supposed to need a guiding hand at all times. This thought and practice makes it very difficult for women obliged to aid in supporting the family to care for their children, consequently, they have baby farms where they farm out their children from the time of birth until they are two and one-half years old or old enough to be placed in one of their kindergarten schools. These farms are said to contain as many as fifty and often more babies at one time, so you may know they can not all have the best of care. It is said that babies often become mixed and mothers do not receive their own when the time comes to claim them. A dressmaker whom I employed said she had a little boy who was sent to a baby farm when two days old and that he was now eighteen months old and she had seen him but three times in the meanwhile. She was dreading the time when she would be obliged to have the care of him as she did not know what to do with him.

Indeed, all over Europe women are the burden bearers and Paris is no exception to the rule. The work of the stores and shops is mostly done by the women, hence they can not have the care of their children. When I became hungry for the sight of a child in all its naturalness I visited some of the parks. There they were to be found always attended by parent or nurse, but they could be seen having their childish sport and fun.

The boys and girls go to separate schools and go attended by parent or teacher. You can see every morning many groups of children headed by a man teacher if boys and a woman if girls, wending their way to the schools.

They have two decided school systems, the parochial and public. One French lady said to me if they wanted to bring their children up in the fear of God they never sent them to the public schools. She said at the latter they were taught infidelism and came forth without any religion. She, of course, as I learned, believed every one not a Catholic an infidel. Such conditions do exist as the Catholic Church on one side and the non-Catholic on the other, and some day not far distant France may see another Bartholomew day, but this time I believe it will be the non-Catholics taking radical action against the Catholics. Such hatred as I heard and saw expressed between the two factions certainly does not forbode all good for the people.

The streets are full of monks and soldiers. Never can one go at a great distance without encountering the monk well fed and corpulent with his long gown, heavy girdle, low, black wide-brimmed hat and low shoes. I did see one order who believed in going barefooted, no matter as to the weather.

The standing army of Paris is so great that it is a common everyday sight to see regiment after regiment of soldiers parading the streets with their drum and fife, but very seldom headed by a band. They are small of stature, poorly and slovenly attired, and do not walk as if well fed and contented with their occupation. They are not there by choice, but by compulsion, and when a man is compelled to give up three of the best years of his life to work for a penny a day, it would not be apt to give him an elastic step or joy in the labor attached to the occupation.

By many Paris is considered the art center of the world, and when you view its miles of art galleries and museums, its Arc de Triumph, its Pantheon, its numerous cathedrals, and churches with their wealth of art, the decoration of parks, boulevards and avenues, it well merits the honor.

The spirit of comparison was ever present with me, and especially so when studying the art of Paris and its results upon the people. Well may it be asked, "Does art make a people great?" "Does art make a people moral?" "Does art lift a people to a higher plain of thinking and doing?" Learn if you can of the conditions surrounding those studying art in Paris, of the artists of Paris, and then answer as to its effects upon the moral status of the people. Of course there are exceptions where the art within is loftier and purer than all the surroundings that may be brought to bear upon it, but those exceptions are rare.

Visit the gardens of the Luxemburg on Sunday afternoon when the band plays and watch the artist and art student with his "model" as companion. His personal appearance with slouch hat, long hair, loose and flowing neck arrangements, and balloon pants, do not inspire confidence either as to his ability, morality, or high ideal of life. Learn of the ways that student dances are conducted and other social affairs by the art employed people of the city, and well one may ask if art is desirable as one of the renowned accomplishments of a nation? Every American parent should study well all the conditions under which either the son or daughter must be placed before they send them across the ocean to study art, whether in Paris, Berlin, or other points where art reigns supreme. Many promising beautiful lives of American youths have been sacrificed to art in Paris.

This the year of the exposition gave the artist or art critic great opportunities, for besides the art of Paris there was to be found the best representative art from nearly every other nation, in fact, from all nations claiming art.

In the study of art in the exposition I was especially pleased with English art and artists. Their work had a softness of finish and decision of color that excelled. They also certainly hold a purer, holier and higher moral idea, if subjects chosen and thoughts expressed, stand for anything. It was a surprise to me that some pictures placed upon the walls of the French exhibit were allowed space. I am also sure that some among the American exhibit could have been dispensed with and the exhibit received greater credit thereby. As I am neither an artist nor art critic, it may be in poor taste for me to have an opinion as to art, but each individual well knows whether in looking at a picture or statue, or in reading a book or poem, whether it inspires to better thoughts or actions, and so I have only expressed my personal experiences. I enjoyed much of the art in the galleries of the Luxemburg, for there is where you find the best pictures and statues of modern artists displayed.

The works exhibited at the Luxemburg are generally transferred to the Louvre or sent to provincial galleries about ten years after the death of the artists. Here we found the "Meeting" by Marie Baskirtseff, the Russian artist of so much talent who died at the age of twenty-five; Rosa Bonheur's "Husbandry in Nivernais;" Dupre's "Morning: Evening;" Lauren's "Communication of King Robert of France," and so on. The Louvre with its miles of galleries can only be mentioned. It takes two hours to walk through without stopping, so one can judge of the art treasures and beautiful things to be seen. It contains what is said to be one of the most beautiful rooms in the world called Gallerie d'Apollon. Here are found the crown jewels, or what is left of them. The room containing Reubens' pictures painted for and under Marie de Medici's instruction, is one of interest; and after seeing, Reubens will always remain in one's mind as a great artist.

It is often asked of the American citizen for the first time visiting Paris and the countries of Europe, what lessons were learned that will be of benefit? As a loyal American woman I wish to enumerate a few that forced themselves upon me; first of all, the lesson of thankfulness for the true, manly, courteous, and refined American man. The product of the American soil in that respect can not be equaled by any country. Second, the respect, honor, and position given to womanhood in our country, for in America she

has risen far above the slave or menial servitude, and takes her place as a being, possessing an individual soul, capable of as high, moral, intellectual, and spiritual attainment as the man who walks at her side. In the countries across the sea women need, as a rule, our heartfelt sympathy, for man in his thoughts toward her is, at least, fifty to seventy-five, yea even a hundred years behind the new and glorious land of America.

Lessons of economy were everywhere to be learned and well would it be for the American men and women to retain and apply them in their daily conduct of living more than they do. Food, fuel, and raiment are so abundant here in comparison, that thoughtless habits of wastefulness can be attributed to almost every American citizen.

The perfect tilling and care of the soil; their narrow and hard well made roads with their cultivated fields and pastures up to the very edge, were a sight never to be forgotten. In comparison, when returning and gazing upon our own wide weed covered highways, poorly made and poorly cared for; our extensive, but not thorough farming, we may well ask if we could not learn a lesson. Could not the land going to waste along our roadsides, covered with weeds, be turned back to the owner and therefrom raise sufficient that would give to us roads throughout all the State of Illinois that every citizen could enjoy and be justly proud of?

In conclusion, let me advise every citizen when the opportunity arrives to visit Europe, to do so; because I am sure every thinking loyal citizen will return a better one by having seen the old world and its methods.

SOME INEQUALITIES IN SCHOOL ADMINISTRATION.

By Alfred Bayliss, Superintendent of Public Instruction, Springfield, Ill.

FACTS AND FIGURES.

There were 804,895 boys and 784,038 girls between the ages of 6 and 21 years, in the State of Illinois, June 30, 1900. A total of 1,588,895 persons of school age.

Of these, 612,385 (303,024 boys and 309,361 girls) were enrolled in the graded schools, and 346,037 (180,768 boys and 165,269 girls) were enrolled in the ungraded schools, during the school year which ended upon the same date.

A "graded" school is one organized with two or more teachers. An "ungraded" school has but one teacher.

The number of children taught in the so-called "graded" schools is steadily increasing. The number taught in "ungraded" schools is as steadily decreasing.

The increase in the graded schools during the biennial periods of the last decade was as follows:

1890-2, 44,715; 1892-4, 48,204; 1894-6, 48,153; 1896-8, 44,812; 1898-1900, 26,342.

The decrease in the "ungraded" schools during the same period, was:

1890-2, 13,582; 1892-4, 1,718; 1894-6, 5,472; 1896-8, 4,268; 1898-1900, 6,594.

Sixteen and two-tenths per cent of all the schools are "graded;" eighty-three and eight-tenths of them are "ungraded." In 1890, twelve and four-tenths per cent of them were "graded," and eighty-seven and six-tenths per cent were "ungraded."

The average number of days the child enrolled in the "graded" school attends during the year is 142.8, while the child in the "ungraded" school attends an average of eighty-nine days.

The cost of all the schools for the year ending June 30, 1900, was \$18,167,-219.32. The amount paid to teachers was \$11,415,992.07.

The "graded" school teachers received \$8,663,424.35; the "ungraded" school teachers received \$2,752,567.72.

Forty-seven per cent of all the teachers were in the "ungraded" schools, but they received only twenty-four per cent of the money.

It appears from the figures heretofore quoted, referring to the number of children enrolled, that they taught thirty-six per cent of the children.

A comparison of the number of months taught in "graded" schools (130,-195) with the number taught in "ungraded" schools (79,868) shows that they also worked thirty-eight per cent of the time.

Surely it is worth more than twenty-four per cent of the money to work thirty-eight per cent of the time and teach thirty-six per cent of the children.

Before it is inferred that this discrimination is unfair, the comparison should be carried one step farther. The whole number of days attendance in the "graded" schools was 87,483,499, while in the "ungraded" schools it was but 30,823,838. From which it appears that while forty-seven per cent of the teachers worked thirty-eight per cent of the time and actually had charge of thirty-six per cent of the children, they did but twenty-six per cent of the work. For the number of days' attendance is the only basis upon which the work done can be compared. The unit of work may be taken as one pupil—one school day.

So that, from this point of view, the teacher in the isolated "ungraded" school is discounted but two per cent after all.

But she was at her post of duty thirty-eight per cent of the time, presumably ready and prepared to do thirty-six per cent of the work. How does it happen that the record of school attendance shows that she, in fact, did but twenty-six per cent of it?

I need not remind this audience that rain, and mud, and blizzards, and bad roads, greatly affect the regularity of the country child's attendance at school. There are other conditions existing to a degree not generally appreciated. For example: Of the 12,809 school houses in Illinois, 1,278 are so unsanitary, or otherwise unsuited to their purpose that the county superintendents admit it; and no good county superintendent will admit a discreditable thing about his county if he can help it, or, at least, unless it is true to the best of his knowledge and belief. They only claim 1,794 comfortable school houses. Between these extremes are all degrees of fitness and unfitness.

There are nearly 2,000 school premises known to be absolutely treeless. There are nearly 5,000 schools without libraries. There are 169 districts in which it is difficult, or impossible, to maintain a school the minimum time required by our very "easy" law, even when taxes are levied to the full limit of two and one-half per cent. There were 435 schools, last year, in which the enrollment was ten or fewer, and seventy-eight in which the enrollment was five, or not so many. In the single county of Winnebago, five schools enrolled exactly ten; thirteen schools fewer than ten; and four schools fewer than five; one school had one pupil. And there are others. Ten were in Bureau, twenty-one in DeKalb, ten in DeWitt, nineteen in Henry, twenty-three in LaSalle, twenty in McHenry, twelve in McLean, ten in Mercer, ten in Rock Island, twelve in Stark, twelve in White and fourteen in Whiteside.

What do you think of the condition disclosed by this letter from Grundy county? It is not at all an uncommon case.

"DEAR SIR:—I am informed that in one of my rural school districts they have thirteen pupils enrolled, and an average attendance of eight. Two of the eight pupils have finished the eighth year work and are studying the higher branches this year. A young lady who is not fitted to teach these branches has applied for the school, and her chances for getting it are very good. The parties interested in the matter wish to know whether the directors can be compelled, under the circumstances, to employ a teacher who can teach them. It seems that the teacher has time for the work and the parents of the two or three do not feel able to send their children away to school. What is your advice in the matter?"

Yours very truly,

Co. Supt. of Schools."

Not long before I had a letter from the same superintendent, asking to be instructed how to advise a teacher who had no pupils to make the schedule required by law before she could draw her wages.

In a neighboring county I was called upon to suggest a remedy for quite the contrary state of things. A teacher there had an ungraded school in which the average attendance was from seventy-five to ninety pupils, and the accommodations about right for forty. There are a good many "renters" in that district, and a few men of means, whose children are grown, have influence enough to block all steps looking to better ones.

And here is an example of both conditions in the same county. I quote from a circular issued by the county superintendent of the rich and historic county of Sangamon, dated January 9, 1901:

"The lowest enrollment in the county is the Huffaker, west of Loami, with three. The next lowest is the Hedge, east of Rochester, with five. The highest enrollment of any one teacher is the primary room of Riverton, with eighty-four. The highest enrollment of a school of one room is Barclay, with eighty. There are thirty-six schools with an enrollment of twenty or less, and nine schools with ten or less."

In my judgment, these facts and conditions have a bearing upon, and suggest at least part of the explanation of the interesting fact that forty-seven per cent of the teachers on duty thirty-eight per cent of the time, in charge of thirty-six per cent of the children who go to school, do but twenty-six per cent of the work and receive but twenty-four per cent of the pay.

I want to quote one more sentence from the superintendent of Sangamon county. He says:

"In my visitation of schools I noted an absence of large pupils and it seemed to me that children do not stay in school till they complete even the common branches, and it was to make the comparison that the two questions were asked. The report shows 689 pupils doing eighth grade work, or the last year's work of the common branches, and 1,335 doing the first year's work. This would indicate that nearly half of the pupils that enter school never complete even the common branches."

And many another county superintendent has observed, even though he may not have reported the same conditions. They are by no means confined to any one county.

The Constitution of Illinois commands the General Assembly to "provide a thorough and efficient system of free schools, whereby all the children of this State may receive a good common school education." Do these things characterize a thorough and efficient system, or a somewhat thorough and inefficient no-system? Do they indicate wise economy, or an improvident waste of energy? If the latter, how may we set about improving and equalizing conditions and opportunities to the end, that in the interest of the safety and the general welfare of the State, no young citizen shall be permitted to reach the age of responsibility without the good common school education for which the Constitution provides?

II.

WHEN TO LET WELL ENOUGH ALONE.

Before undertaking to suggest two or three steps, which may well be undertaken at once, may I digress far enough to say that I am not to be understood for one moment as intimating that all the good teaching necessarily, or in fact, follows the more favorable conditions. There is a little country school of thirteen pupils, in one of the northern counties, in which the children and the teacher, working together, in one year acquired without aid from the public funds, 190 books and nineteen pictures. The boys cleaned out a vacant stall in a near-by barn, and fitted it up for a work shop. They made, at noon times, shelves for their books and frames for their pictures. They made a sled "to draw the girls on," and one of the girls wrote me that some of the boys gave the girls a sleigh ride. "Marsh" 8—"the day the first

meadow lark came," and that "the teacher loves the birds, and writes their names on the board the day they come." (I saw some bird calendars on the wall of one of our new State normal schools, not long ago, so the "method" must have been right.) They built for themselves a "cabinet" to hold the curious things they had gathered by exchange for such specimens as they could gather along the banks of Rock river. This was their way of getting at the geography. "We wrote to Hawaii," one little fellow told me, "and when they wrote back they sent us a lot of shells and pieces of wood that grow there; and when we wrote to Florida, they sent us some tarpon scales, and the saw of a small saw-fish. We got some letters from a school in Washington. There were thirty-eight of them. The last letters we wrote were to a school in Eastport, Maine. We are going to write to a school in New York next week." In the spring they planted flowers, and a vegetable garden, which they used in connection with their "nature study," selling the surplus crop of vegetables to buy books. Moreover, the teacher's black cat came to school every day and was well treated by every member of that little community. Do you catch on to the full meaning of that?

Now, the most distinguished professor of pedagogy in Illinois—perhaps in the United States—has recently published a little book in which he tries to show how to break down the barriers between school life and everyday life, and introduce from the beginning of a child's school life, subject matter of value and significance and interest—knowledge of the world and society, in definite relation to the formal exercises in reading, writing and geography, and the like. Many a supervisor of education has read the book and failed to see as far into its meaning as that country teacher exemplified it in her practice. It is doubtful whether she ever heard of the book, but having the pedagogic instinct, she couldn't help teaching—even on half pay, in a seven by nine school house out on the prairie.

So, in anticipation of what some of you will say to what follows, I want to say that if you can find a teacher of that quality, and your district has taxable property and enterprise enough to provide a well lighted, warmed and ventilated building, containing a little library and a place for it, a musical instrument, a museum, and a work shop, and, provided further, that you can elect a board of directors who will see that the surroundings reflect something of the good taste and aspiration of the neighborhood, and if there are children enough in the district to make a school, and the public sentiment is strong for eight or nine months' school each year, and your directors know how to select a good teacher and are wise enough to keep one when you have him, you had better let well enough alone—for the present.

On the other hand, when these conditions do not, or can not, exist—and I have been conservative to a degree in my enumeration of them—a remedy should be sought. In my judgment, it must be found, if at all, in some form of consolidation. Weak districts must be thrown together in sufficient number to make strong ones—all the schools in a township if need be.

III.

THE OHIO PLAN.

I have lately seen some excellent examples of the practical working out of this plan in the state of Ohio. What has become widely known as the "Kingsville experiment" was made possible in that state by an act which applied to "any township which by the census of 1890 had a population of not less than 1,710 nor more than 1,715." In other words, the legislature of Ohio was willing to let the people of Kingsville and vicinity furnish an object lesson for their more conservative neighbors, if they were willing to take the chances and foot the bill. That village and township, however, proved to be like the man who insisted "that he was not such a fool as he looked." The daily attendance increased. The cost per capita diminished. There was a balance on the right side of the account of over a thousand dollars in the first three years. As a result the enabling act was made general and the plan is spreading. Two very notable examples came under my observation. The first was in Gustavus township, Trumbull county. There were formerly nine districts

in that township, and as many small schools. Four years ago the nine districts were consolidated. A frame building, with four rooms, was erected at a cost of \$3,000. A principal, three assistants, and a janitor were employed. Nine comfortable, covered spring wagons, with drivers under \$200 bonds, were engaged to convey the children to and from the central school. Before the consolidation the average school attendance in that township was 125. Last year it was 144. The school population remains about the same. The year preceding the consolidation the schools of the township cost \$2,900.00. The union school cost, including the wagons, \$3,156.00, an increase of \$256 for the township, but a decrease of \$1.29 per pupil on the average attendance.

The other case is in the adjoining township of Green. The people of this township were divided in opinion three years ago. They, therefore, wisely waited for the result of the experiment in Gustavus. After observing it two years, they were satisfied. Public opinion crystallized in favor of the plan. Last September the people of this township opened a new, steam heated, well lighted and ventilated brick building, having six large school rooms, and two smaller rooms, one of which is set apart for the library. Eight wagons convey the children. The principal of the school told me, with pardonable pride, that there was a piano coming. Both of these schools do about three years of high school work. Public sentiment is no longer divided.

The last statement should, perhaps, be qualified. In May, 1900, a committee of two citizens, one for and one against "consolidation," was sent from a township in Warren county, Ohio, to investigate and report upon the facts as they found them in Gustavus township. The report, signed by both members of the committee, stated that persons known to favor the plan were purposely passed by; that fifty-four persons were questioned, and their answers were as stated in the report. Of that number, forty-three were for, seven against, and four indifferent to the plan. Of the seven who declared against it, six were without children of school age, and of the four who were indifferent, none had children of school age. "Of all the fifty-four, we find," said the committee, "but one person with children who was opposed to centralization." I talked with the citizens in six or seven country towns in which the plan is in operation, in three different counties, and failed to find a single individual who did not approve it.

Such illustrations could be multiplied. The plan works out. The health of children is improved, because of the diminished exposure to stormy weather. School attendance is increased, both in regularity and in the number of pupils. Tardiness and truancy disappear. The school year is lengthened. Better teachers are employed. Teachers can be better paid. I asked one little fellow of ten or twelve years how he liked the union school. "Oh, it's great," he said, "to be where something is going on." And, perhaps, it is from this widened circle of acquaintance, extending beyond the children to the whole community, that one of the great benefits is to be derived. The isolation of small schools—ten pupils or fewer—is not favorable to intellectual, moral or social growth. The young mind grows by contact with other minds, and quite as much by contact with those of near its own strength as by the influence of stronger ones. If this plan both improves conditions and saves expense, as I firmly believe it does, why not make it available for any who want to use it in Illinois?

To the end that it may be possible for those who want to do so to try it, a bill has been introduced in both branches of the General Assembly. It is House Bill No. 10, and Senate Bill No. 116. It is a purely local option provision, and does not interfere with or propose to modify in any way the status of any school district in which the majority of the people prefer to retain their present district organization. I am persuaded that the Legislature will grant this measure of relief, if convinced that the people want it.

IV.

THE HIGH SCHOOL PROBLEM.

Again, there are but 321 high schools in Illinois. Ten counties have none. Less than 40,000 of the 958,422 children enrolled were in the high schools last year. I shall not stop to discuss the value of the high school. The high school comes with the great economical revolution in the midst of which we live. It is the product of no man's theories. The conditions of modern life are such that no system of common schools can be "thorough and efficient" without it. It has come to stay. It is as necessary as its influence is benign.

Why, then, should the opportunities it affords be provided free for one-half the children and denied to the other half? What has the farmer's child done that he should not be equally favored by the schools? To ask these questions is to suggest the only answer. "Those who live in the fields are as deserving of the best there is in education as those who dwell beside the asphalt." The country youth is entitled not only to as good a school, but to as much school as his city neighbor. How can it be equitably provided? The township high school law, passed twenty-one years ago, even as amended, can not be pronounced a success—without reservation. About twenty excellent schools are organized under it, but they are nearly all located in centers of population—cities of considerable size where the people have noted its advantages. The communities for whose benefit it would appear on its face to have been made do not, perhaps could not, economically, use it. Evidently some other way must be provided for him, or the country boy must continue to halt at or near the eighth grade, or find his own way to pay for his tuition through the high school. This is the law. But it is not equity, any more than it is consistent with the idea of a free State university.

I suggest and recommend legislation providing essentially as follows: Whenever a pupil has completed the course of study through the eighth grade, and has received the county superintendent's certificate to that effect, and when there is no high school in the district in which he resides, he shall be entitled to attend the nearest accredited high school free of all charge or tuition. The board of education having control of the high school thus attended to be authorized to collect, and the proper township treasurer to pay the tuition, charging the same to the district in which said non-resident pupil lives, if in the same township, or to the township fund, if he lives in another township. Or, and better, an appropriation might be made available, from which such non-resident tuition in high schools should be paid by the State at large. The essential thing contained in this recommendation is to open a door of a high school somewhere to every boy or girl who aspires to enter it, throughout the length and breadth of the State of Illinois. The high schools thus authorized to receive non-resident pupils should, of course, be inspected and approved by competent authority. A moderate use of State aid might well be made a means of bringing the high schools of smaller communities up to a recognized standard.

A bill to this effect has also been introduced. It is House Bill No. 9, and Senate Bill No. 88. I hope you are for it, at least as a temporary expedient, pending the time when we shall have high schools in the country quite as generally as in town. For the thing to be desired is a high school within reach of every farmer's boy and girl, giving them just as high quality of instruction in mathematics, science, language and literature as the city high school gives, but so carried on as to lead them to see that mind is the dominant factor in successful agriculture quite as much as in any other vocation. It has been demonstrated at least once in Illinois, that the right kind of a high school in a progressive farming community can be so conducted as not only to pay for itself, but to so affect the farming that the increased income from a single farm product would pay all the other taxes of the township.

V.

SCHOOL LIBRARIES.

A paragraph in section 27, article V, of the school law, provides that school directors "may appropriate, for the purchase of libraries (and apparatus) any school funds remaining after all necessary school expenses are paid." There is just a faint suggestion—perhaps the shadow of a shade—of something resembling irony in this language of the law. It may have escaped the attention of the directors of the five thousand schools yet without libraries, but the thousands of teachers, who by every conceivable form of self-help, from a pumpkin pie sociable to a high grade lecture or concert, have raised a little money for the book fund, have not failed to notice it. The children in the districts where the pupils give the school room its annual scrubbing, and turn the money paid them by the directors for it into the book fund, or the children in the district where they cultivated a vegetable garden one year and applied the proceeds in the same way, could point out the defect in that provision, and insert the right word in the right place. They have learned that a library is a necessity, and not something to be provided after it appears whether there is going to be a surplus.

The library is a necessity. The school is not furnished without it. After provisions have been made for light, warmth and ventilation in a school room, it may well be provided with seats and desks, provided the purchaser does not forget that they are for children of different sizes. So much having been done, the library takes precedence of all other necessities, even the blackboard. No school is well provided if it is without a library. It may be questioned whether it is a good school. It most certainly is not the best possible school, and nothing short of that ought long to be good enough for any district in Illinois.

The activity on the part of teachers in providing ways and means where there have been "no school funds remaining," has been one of the noteworthy characteristics of the last two biennial periods. More than 203,234 books have been procured, most of them by extra-legal methods, within the last four years. It is pleasant to note, also, that in very many cases, when the teachers and children have put their shoulders to the wheel, and begun in earnest to help themselves, Jupiter, in the guise of an intelligent school board, has come forward with assistance. In many counties there are districts in which the directors systematically appropriate as much money without waiting to see if there shall be any "remaining"—as the school raises by its own efforts. This work has been encouraged by all the teachers' associations, great and small, and has been promoted by nearly every county superintendent, and by the State department. The crusade for books will be continued until every school in Illinois has its working library of reference books and a collection of good books to read at home.

This country has committed itself to the proposition that every child shall be taught to read. To that much there is no alternative. But merely to teach him to read, is to stop far short. The power to read gives its possessor "access to the universal mind of man." That is a great thing. But it is putting in his hands what, if undirected, may prove to be a means of culture or degradation, and it is almost as likely to be one as the other. The power to read is like a ladder. By its use one may ascend to the heights, or descend into the dampness underground. No system which gives a child the power to read and omits to cultivate his taste and power of selection is sufficient. The school is as much bound to teach even young pupils to discriminate as it is to teach them to spell out the words. More. That is why a collection of the right kind of good books for this purpose is part of the working outfit of a school. Some wisely directed reading is needed, too, to reinforce the training of the studies. Books multiply ideas. They give breadth and poise to the mind. They enlarge resources. They stimulate mental ambition. They educate the conscience.

The systematic improvement of the reading of the people is second to no civilizing agency in scope and power. The district school library, used under

the guidance of an intelligent teacher may be made a fountain—Valelusa-like in its dimensions, it may be—but a source, nevertheless—of life, of mental health and moral strength. It is demanded of the schools that they produce good citizens. They are for that purpose, and can be justified on no other ground. By no other agency can the schools do so much to inculcate the love of liberty, truth, patriotism, piety, patience, reverence, philanthropy, fortitude, and all virtues, or to subdue all passions—to “hold fast to the man and to awe the beast,” as Emerson puts it—as by the right use of the right kind of books. The text-books merely inform. Good literature inspires to fuller life.

I, therefore, most urgently recommend legislation to encourage the smaller districts to establish and aid them to maintain suitable school libraries. Such legislation may well take the form of a small annual appropriation to every district which first does something for itself, whether by appropriation of district funds by the directors or by any of the means now so much in vogue, or both, and should, of course, be conditioned upon the selection of the books purchased from an authorized list, and the making of specific provision for their care.

A bill has likewise been introduced in accordance with this idea. It is House Bill No. 8, and Senate Bill No. 86. Such a statute, I am sure, would be followed within a year by definite provision in more than half the county institutes for instruction in the selection and right use of a school library. Nothing is more needed.

VI.

SCHOOL ARCHITECTURE AND SCHOOL ROOM DECORATION.

Closely related to this library activity, and bearing a relation to the health and comfort of the children on the one hand, and their æsthetic training on the other, analagous to the influence of the library on their intellectual and moral growth, is the very noteworthy, and rapidly spreading activity of the working teachers, in town and country, in the matter of school room decoration, and the demand just setting in for more intelligent school architecture in the country. There seems to have been a general awakening. Zeal and enthusiasm are not wanting. Knowledge is less abundant. The average teacher knows little of art. “Any color will do—if it is red,” indicates the limitations of most of us. But the right of the child to cheeriness and as much artistic beauty as possible has been announced and the doctrine accepted. The teachers have sent up the Macedonian cry from more than one direction. In several counties regular daily lectures were given during the last institute by competent instructors, dealing in a direct and simple way with the tinting of walls and ceilings, the selection and hanging of pictures, and the whole matter of interior arrangement. In this movement it may be said, without invidious comparison, that the stalwart superintendent of Cook county is the recognized leader.

The Northern Illinois Teachers' Association, unsurpassed in energy and the power of bringing things to pass, by any similar body anywhere, gave its entire time at the last meeting to the discussion of school architecture and interior adornment. The architects, too, who in recent years, have produced so many attractive buildings, have come to realize that the central consideration in every school house is the working school room, and it has lately become possible to find examples of one-room buildings, pleasant, convenient, sanitary, and not without architectural beauty. “Show me your school house, and I will size up your city,” said a shrewd commercial traveler. It will soon be that way in the country. The school house, everywhere, should exhibit the taste, and to some extent, the aspiration of the neighborhood. It should be as good as the best dwelling. It should be lighted from the right direction; have the teacher's desk at the right place; have ample air and floor space; it should have cloak rooms for the boys and girls, lavatories, and the best possible closets. It should be ventilated, and, when possible, have a dry, clean and warm basement. It should have abundant book cases, cabinets and reading tables. The blackboard should be within reach of the children. The

walls should be intelligently tinted. There should be two or three good pictures, and at least one piece of statuary. There should be a workshop. The ground should be ample for play, and there should be space left for trees, and grass, and flowers.

Can you not see, my friends, bad roads, and the inertia of your conservative neighbors in favor of the ancient landmark, to the contrary notwithstanding, that one such school in a township could be made a strong center of community life, not only widening the circle of acquaintance of the young, but drawing all the people nearer together for social and intellectual purposes? In the centrally located school house could, and most certainly should, be one room large enough for public assemblies, in which might be given concerts and courses of lectures. And what would not that one thing alone add to the value of country life?

In simple justice, then, to the thousands who can not, and all those who would not, if they could, swell the great tide of youth toward the city; to the end, also, that those who choose to go may be pure and strong, and intelligent enough to augment the forces which make for righteousness in the cities, let us deal fairly and liberally with the country children in this matter of school opportunities. To good roads, trolley lines, telephones and free mail delivery let us add equal educational opportunities, thus making the old question, "which is preferable, city or country life?" no longer debatable.

This is the first great question of school administration for the twentieth century to settle. It will not be settled until it is settled right, and it will not be settled right until we have made educational opportunities and privileges in the country as good and complete as they are anywhere.

It will not be settled rationally and economically while forty-seven per cent of the teachers, having charge of thirty-six per cent of the children, and working thirty-eight per cent of the time, do but twenty-six per cent of the work, for but twenty-four per cent of the money.

FRIDAY MORNING, February 22, 1901.

The morning session was devoted to the class work with a renewed interest in the same.

Professor Kennedy has this to say of the class work, in a letter after the State meeting, to the Secretary:

"In regard to the class work, I may say that I consider our work to have been very successful, but by way of recommendation would suggest that in the future it would be more beneficial if a separate room could be had for each class, as one speaker annoyed another to considerable extent. I may say a great many men have said to me since the meeting that they considered the class work to be the most beneficial part on the Institute program. It was a place where a man could get directly at the speaker and ask him any questions he desired, thus much valuable information was imparted. The attendance on the various days was as follows: Wednesday, 125; Thursday, 180; Friday, 160. I would suggest that you continue the work next year, and if I can be of any assistance to you in arranging the work, I will be only too glad to render such service.

Trusting that this will be satisfactory to you,

I remain, very truly yours,

W. J. KENNEDY."

REPORT OF THE DOMESTIC SCIENCE CLASS WORK.

By Mrs. Nellie S. Kedzie, Instructor.

The class in Domestic Economy met three mornings in succession in the right side of the opera house. The first morning there was an attendance of about sixty women; the second morning there were about a hundred women; and the third morning we found about the same number of women and twenty-five men. The topics brought before the class differed widely from each other, but all created a good deal of general interest, and the women who met together were exceedingly kindly in their readiness to take hold of each topic as it was brought before the class, and to discuss as rapidly as possible the subject in hand. The first morning the subject of "Proportionate Spending of Income" called out satisfactory discussion. Two types were suggested: One a girl earning six dollars a week; the other a man earning a thousand dollars a year, and having a family consisting of his wife and two children to support. The amount which each could spend upon shelter, food, clothing and mental growth was discussed, and it seemed the general opinion that every person who earns money ought to plan the spending of that money in such a way as to properly proportion each month's wages.

The second morning the subject of "Proper Apportionment of Food for Growth and Health of the Body" was discussed. While the farmers are discussing balanced rations for their cattle, it is quite worth while that the farmers' wives discuss balanced rations for their families. One woman would give a typical breakfast in her own family, and others would criticise or approve until many women took part in the discussion.

The third morning the subject of "The Responsibility of Grown People for Children," whether they be parents, teachers, or simply citizens in a town, formed the topic of conversation. Some of the men were very ready to help in discussion of this subject, and many strong ideas were brought out. One man insisted that children are taught to be untruthful by the grown people about them. There seemed to be a very wholesome idea of responsibility and the consequent need for help from various people in order to lessen the evil and the crime now found in many of our communities.

For next year I believe it would be well to have the topics for discussion printed in the program so that people who are willing to help in these morning lessons will be ready with all the ideas they have upon the subject; thus more ground can be covered in a limited time, and more opportunity may be given for the asking of questions. It seemed a very profitable innovation which is capable of resulting in much good.

FRIDAY MORNING, February 22, 1901.

Prayer by Rev. E. Morey, Jacksonville, Illinois.

Almighty God, we thank Thee for this goodly land that Thou hast given us. We thank Thee for the noble men and women that Thou did send here. We thank Thee for the speakers we have had to instruct us in the right way. We ask Thee that we may be up and be with those who have gone before us in cultivating the best soil, in doing the best things, in doing the best for each other and for all about us. Today we thank Thee for this man of ours, and that Thou hast made him to lead the people, an honest, reliable, pure, true-hearted man, true to his country and true to his God, and we pray Thee that the thought of him goes all over this land today. We pray Thee that his spirit may control the people of this nation. Today bless the President of the United States and those sitting with him in authority, the members of Congress in session, and we pray Thee that these men may fill their responsibilities to do for us. Remember the Governor of this State and the Legislature in session and the leaders of public opinion, all editors of papers, all public speakers, all who frame the notions and thoughts of the people. We

pray that Thou make them realize what we owe to Thee and to the great nation. We pray that Thou be with us in these deliberations and make us all go back with the firm resolve to do the best we can in this world. Amen.

The pupils of the Institute for the Blind, in the form of the orchestra, then rendered the Morris Dance, Shepherds' Dance Henry the VIII. Reuben Hartman then played a violin solo and Bertha Rowley sang a song from Gounod, accompanied on the violin by Reuben Hartman.

Report of the Committee on Resolutions was made as follows, by H. G. Easterly, Chairman:

WHEREAS, For a number of years past public grain warehousemen of Class "A" in Chicago have been dealing in grain in elevators in charge of such warehousemen; and

WHEREAS, The circuit court of Cook county and the Supreme Court of Illinois have declared that such dealing has produced a practical monopoly of grain in Chicago, against public policy, resulting in depressed prices, detrimental to producers and shippers and in restraint of open trade and commerce; and

WHEREAS, The Fortieth General Assembly of Illinois legalized such dealings in grain, which law the circuit court on January 10th, last, declared unconstitutional; therefore, be it

Resolved, That the Illinois State Farmers' Institute in convention assembled at Jacksonville, Illinois, request the repeal of that portion of the Illinois Railroad and Warehouse law granting such privilege to warehousemen of Class "A," and request the present Assembly at Springfield to adopt an amendment to said law, making it a penal offense for such warehousemen to deal in grain; and be it further

Resolved, That a bill has already been introduced in the House by the Hon. John A. Montelius, known as House Bill No. 142, and that all farmers and members of the State Farmers' Institute are hereby requested to communicate with their respective members throughout the State urging the immediate passage.

WHEREAS, The indiscriminate discharge of fire-arms along the public highways endangers the safety and lives of both travelers on the highways and residents of adjacent farms, as well as disturbing the public peace of the neighborhood; and

WHEREAS, The annual loss to farmers, stockmen and feeders resulting from wounds or death to stock from the careless discharge of fire-arms in the hands of thoughtless hunters, is so far in excess of any possible advantage to be derived from said hunting; and

WHEREAS, The random discharge of fire-arms around a farm or feed lot produces such evil effects upon the stock, often causing material financial loss to the owner thereof; therefore, be it

Resolved, That the Illinois Farmers' Institute strongly endorses the passage of some law prohibiting the discharge of fire-arms upon the public highways of the State, and the present indiscriminate hunting and shooting along the public highways of the State.

WHEREAS, Illinois has built for her Agricultural College and Experiment Station the best and most commodious building provided by any State; and

WHEREAS, There has been an increase of students from 21 to 157, or over 500 per cent in two years; and

WHEREAS, This has brought greatly added demands upon the college for instruction and for apparatus; and

WHEREAS, There are increasing demands upon the Experiment Station for information and for the conduct of experiments; and

WHEREAS, The college and station were founded and are still maintained entirely from the United States government funds, and are thus unable to pay as high salaries as are offered elsewhere, or to provide the equipment and instructors needed for the new building and the increased number of students; and

WHEREAS, Other states have added to these funds by liberal appropriations of state funds until some of them are devoting two and even four times as much as Illinois devotes; therefore, be it

Resolved, By the Illinois Farmers' Institute that the best interests of the State demand that Illinois follow the example of other states and devote State funds to the support of the college and station to the end that our boys may stand before the best instructors and work with suitable apparatus, and that much needed experiments may be conducted looking to the systematic study of crop and live stock interests under the various soil and climate conditions of the State; and be it further

Resolved, That we use all honorable means to secure the passage of the two items of the trustees asking for furniture and apparatus for the new building, and for funds for additional instruction; and be it further

Resolved, That we use all honorable means to secure the passage of a bill prepared by the various agricultural organizations of the State and looking to an equipment of live stock for said college and to the extension of the work of the Experiment Station as specified therein.

WHEREAS, The Forty-first General Assembly made a liberal appropriation for the construction of an agricultural building and in doing so saw fit to withhold the amount needed for a chemistry building; and

WHEREAS, There is great and urgent need for increased facilities for the department of chemistry; therefore, be it

Resolved, That the General Assembly be respectfully urged to provide a suitable building for said department at its present session.

WHEREAS, The workings of the State Farmers' Institute are so far-reaching and productive of such excellent results, awakening the farmers to better methods along their various lines of work, putting new enthusiasm into the life of the farm, helping to alleviate the spirit of unrest among the farmer boys and girls; and

WHEREAS, The circulating library as introduced and operated to a limited extent by the Farmers' Institute has not only proven a feasible plan, but has solved the question of free libraries for the agricultural communities; and

WHEREAS, The growth of the Domestic Science Association has been so universal, awakening the women on the farms and assisting so wonderfully in the betterment of the domestic life on the farm; therefore, be it

Resolved, That we most heartily endorse the bill before the present Legislature for the continuance of the work so ably accomplished by the farmers' institutes and urge the passage of Senate Bill No. 155 making appropriation for the Illinois Farmers' Institute and \$75.00 for each county farmers' institute.

Resolved, That we earnestly recommend the Legislature to make such enactment as will enable the enlargement of the library system so that all sections may partake in the benefits derived from a library of well selected books; further, be it

Resolved, That we favor the encouragement of the Domestic Science Association and a suitable appropriation for extending and pushing the work so ably commenced.

WHEREAS, Our respected and honored President, G. A. Willmarth, is not able to be with us, on account of physical disability; and

WHEREAS, We realize his affliction is largely due to his untiring and persistent efforts in the advancement of the Institute work throughout the State; therefore

Resolved, That we extend to him an expression of our appreciation of his work and our most sincere sympathy with the hope that he will in the near future be fully restored to health.

Resolved, That these resolutions be spread upon the records and a copy of the same be forwarded to President Willmarth.

WHEREAS, It has pleased the Omnipotent Ruler of the Universe to remove from his sphere of usefulness the Hon. James A. Mount, thereby removing him from our program and depriving us of the benefit to be derived from his practical talks, and when, as we realize the great influence for good he has had upon agricultural interests in general, being a practical farmer elevated to the highest post of honor by his state, yet maintaining his simple manner and doing all within his power to advance the welfare of his fellow farmers; therefore, be it

Resolved, That we, the Illinois Farmers' Institute feel that in the death of ex-Governor Mount, not only has the state of Indiana lost a great and honorable citizen, but that the agricultural interest of the entire country has lost one of its most efficient members and workers—a loss to be greatly deplored.

Resolved, That the foregoing be spread upon our records and a copy be forwarded to the family of the deceased.

Resolved, That the members of the Illinois Farmers' Institute have been specially pleased to see the large numbers of boys and girls from the city schools; their attention and interest in the various discussions of the Institute have been a new and pleasing feature in the annual meeting. It deserves special mention in our proceedings. It should be further said that these young people came with their note books and have made full notes of what has been said here; their teachers say that the pupil-committees have returned with full notes of our discussions and the important features of our meetings. What we put into the lives of the young people at this time will reappear in the future men and women. The thanks of the Illinois Farmers' Institute should be specially extended to pupils and teachers of the Jacksonville public schools for the unusual interest and enterprise in attending our various sessions. With the public schools and the University of Illinois back of the Illinois Farmers' Institute, its future work will steadily grow in public opinion and usefulness.

Resolved, That the Illinois Farmers' Institute extend its cordial thanks to the daily papers of Jacksonville for their extended and complete reports of the proceedings, given from day to day.

Resolved, That the thanks of this Association and the visitors in attendance are hereby extended to all who contributed in a musical way to the programs of the various sessions of the Illinois Farmers' Institute. To Dr. M. H. Goodrick, chairman of Committee on Music, and to the Illinois College Glee Club, the Woman's College students, the members of the Illinois Conservatory of Music, the pupils of the Jacksonville High School, under the direction of Mrs. Constance Smith, and the students of the Institutions for the Education of the Blind and the Deaf and Dumb.

Resolved, That the Illinois Farmers' Institute and delegates hereby extend their hearty thanks to the several committees of the citizens of Jacksonville and the officers of the Morgan County Farmers' Institute, who assisted in making the meeting a success, and to the citizens of Jacksonville and the officers of several State institutions for their expressions of hospitality and many courtesies extended during our stay in the city.

Respectfully submitted,

H. G. EASTERLY,
J. H. COOLIDGE,
A. F. MOORE,
C. A. WETHERBEE,

Committee

A delegate moved that the resolutions be adopted as a whole.

The Chairman:—You have heard the reading of the resolutions. Does any one wish to discuss or have any of the resolutions re-read? If there are no remarks I will put the motion. All in favor of adopting the resolutions as a whole will please rise; all opposed will rise. The resolutions are adopted by a unanimous vote.

THE VALUE OF A CROP OF SUGAR BEETS AS COMPARED WITH OTHER STAPLE FARM CROPS, AND ITS EFFECT UPON THE SOIL.

By Professor P. G. Holden, Pekin, Illinois.

Spoke in part as follows:

He said it took the whole oats crop to pay for the sugar we use and it takes several times as much land to produce the oats as would be needed for the beets. There is enough unused land on which enough sugar beets could be raised to supply the needs of the people, and if properly cultivated and conserved into Jacksonville and Morgan county from \$200,000 to \$600,000 would come. The richest land is necessary for beets and will give best results. Beets will pay far better than 100 bushels to the acre. We have had a yield of from \$100 to \$130 an acre, which is certainly more profitable than corn. Beets are not exhaustive to the soil, for when properly fertilized for the beets it is not impoverished. Beets do not take from the soil as much as corn or other grains. The tops are excellent for the land and animals like them and they make excellent feed. A man had ten acres of well fertilized land, half of which he put in corn and one-half in beets. The latter yielded \$400 and the corn \$100. In his case he and his boys did the cultivating so that he was really \$300 ahead on the beets. One objection regarding the work needed to produce beets has been raised, but that has not been found to make any trouble, as there are plenty of boys wanting work and in the beet field they are all right. In the vicinity of Bloomington they are going to offer a premium of \$500 for the best beet field. The average field in that vicinity has been \$68 an acre, and while it costs more than other crops to cultivate, that extra expense is all paid out at home. A man followed a 700 acres crop of beets with corn, which yielded finely and the experience has been had elsewhere. The beet goes deep into the ground and the corn roots follow the same way the next year, and though the crop grows slowly at the start it turns out better in the end. On suitable land a beet crop may be raised successively for two or even as much as five years, though I do not recommend it. There are now thirty-three factories in the United States and 1,000 would not more than supply the country. The output of the Pekin factory would supply the State of Illinois but a few days. We offered a man \$12 rent per acre for land. He planted it himself and received \$87.50 per acre. The work cost him \$30 an acre and he did not work himself.

In the vicinity of Bay City, Michigan, in January there were fifty-one mortgages released. Fall plowing early is preferable, as it keeps down the weeds. Best results come from manuring clover sod and breaking in the fall. Don't plant on timothy or blue grass sod until you have taken off a crop of corn. We have had little trouble with insects. Plant rows 16 to 18 inches apart and thin to 8 inches apart. Successive crops tend to bring in disease and pests. Factories will come to communities where beets are an established fact. Don't expect to get a factory by offering a bonus, but show that you can supply the beets. Illinois is paying \$50,000 a day for sugar it should produce. Soil well fertilized is better for beets. Ground at all suitable should yield fifteen tons of beets an acre and bring \$4 a ton, the company paying 40 cents toward freight. Plant on fresh ground just prepared about May 1. Seed costs \$2 to \$3 an acre. Proper tools will be rented at \$1 an acre. The factory will send a man and do all possible to encourage beet cultivation. Freezing doesn't hurt the beets, as a rule. We get seventy-five per cent of the sugar from the beets and the remaining syrup is sold for making cider vinegar.

J. H. Hackett gave the results of experimental beet culture in Morgan county by an expert sent here. Four kinds of soil were tried. First piece, timber land, fairly good. Second, bottom land. Third, prairie. Fourth, richest, blackest, best land. The first was fairly good, the second better, the fourth was a success, yielding about \$24 an acre profit. The timber land showed a loss and the bottom land a medium success. The rich land right opposite the Wabash passenger depot, flat, black, rich prairie made \$24 an acre and had the land been prepared properly the yield would have been twenty-four tons instead of sixteen. The expert sent didn't fully understand his business.

Mr. Chairman:—Today is Washington's birthday. Washington was a man whom we all can remember. In honor of his birthday I would ask this congregation to rise.

Whereupon the entire assemblage rose to its feet.

Mr. Wilson:—Upon opening the question box I hardly find any questions in it, but I hope we will have a general discussion.

The first question is, "How can the raising or feeding of cattle, either for milk or beef, be established, in a community of tenants, or farmers, who consider themselves too poor to make the investment?"

In our part of the country some of the landlords help the tenants by purchasing the stock and taking the tenant in as a partner in the business.

Question No. 2. "For the renovating of worn out land, clover, cow peas, etc., are recommended. Can this be advantageously carried on indefinitely?"

I would like to have Mr. Professor Holden answer that question, if he is present.

Professor Holden:—I want to say that as a matter of experimentation that clover will in fifteen or twenty years more completely exhaust the ground than any other of our crops. It does it more completely and when you have once got it out you have to resort to fertilizers again. Let me say this, that in Michigan there is no question that is of so much importance to them as clover, and there was nothing that was discussed more in institutes there. As I am a sugar beet man here, I was a clover man in the College of Agriculture. If you was to ask me what crops were or would best keep up the fertility of the soil, I would say clover. But every good dairyman must turn it to feed and use the manure. If you take it off from year to year to sell it, we all know the ground would finally go down. But if you will feed that clover or feed the corn and oats from that clover, you are selling off butter which is nothing but wind and water manufactured by this animal into a product, and returning the elements of fertility in the soil and in available condition so that it can be used for the next crop. If you sell to the elevator for a period of twenty years your corn and oats, and use clover to feed it, you can exhaust your soil more completely in that twenty years than you could do it in any other way. But if you will feed that clover and turn it into oats, there is no better way of keeping up the fertility.

FRIDAY AFTERNOON, February 22, 1901.

Music by the orchestra from the Institute for the Blind, under the direction of Professor Hoblett.

Mr. Chairman:—Next on the program is open parliament for the discussion of how to increase the efficiency of the Farmers' Institute. If any one has anything to say on that topic will be glad to hear from them for a short time.

Mr. Unzel:—I live in Hancock county. We had trouble there over the lack of attendance, but the last institute we had we could hardly get them in the building. We offered a little prize to the boys for the best essays and the boys came around. I find, though, that the greatest thing that brought out our attendance was the fact that we got outside of the county seat of our county. The county seat of our county has a little of everything in it. They have the opera building, they attend the opera. They have all sorts of meetings and when us dull-headed hayseeds come in they don't want to hear us. I want to tell you now that we had a hall that we could set 300 chairs in and those chairs were full and every inch of standing room was jammed full. At night we had to hire a church seating about 600. That was all taken and only standing room. If you get outside of the county seat and get out in the farm regions for these institutes, and then give them a program that is interesting, and give our home talent a chance and get them all to come out and discuss things, I think you will have interesting institutes and good times.

Mr. Hostetter:—Some of the high school children and other children have been keeping tab on this Institute. I would like to call upon the principal of schools, Mr. Henninger, and see what he has got out of the Institute.

Mr. Henninger:—Mr. Chairman: I want to say on behalf of those young people in the gallery, young people that have been in these institutes here from day to day, that we have been very much interested in the sessions of this Illinois Farmers' Institute. I want to say frankly to you farmers, you gentlemen who are back of this organization, that I have been very much impressed with the high tone upon which you pitch your discussions. Our young people have come in here from session to session. They tried to hear what you were saying—tried to get the drift of it and have set down in their note books some of the things you said. Some of the children have sketched what you had on the charts and have gone back to the school room and have reported such things as they understood, and discussed them. We are very grateful to you, Mr. Chairman, for bringing this strong program in the city. It is very gratifying to me, who spent nineteen years of my first life on the farm, the best education I think I had, and it is a very pleasant thing to me to see that in the years that lie in between those nineteen bright years and the present life, it is very gratifying to me to see to what tone and dignity you are elevating one of the greatest departments of American industry and American life.

I am sure that the Farmers' Institute and the members will carry away from this city the best wishes of the citizens of our city and of the various interests that go to make it up. If you had had nothing else on your program except yesterday afternoon's session, just that one session alone, it would have been enough to have made a whole institute. It is wonderful what these women are attempting to do in the dignifying of the home. I want to say to you farmers, that no boy will stay on the farm; no girl will stay on the farm with the cities opening up opportunities to them as the cities now are, with thousands of doors of opportunity opening up to men and women as they are, unless you stand by these good women as they are attempting to dignify the home and elevate the school and make life better worth living. But with the scientific farming that you men are doing, with your analysis of the soils, with your countless departments of agriculture and horticulture, with your various equipments and with the great university back of you, I think there is not a brighter outlook than for farming in this world. And you are starting out at the beginning of this century with the brightest outlook of any industry I think there is, and I am very grateful to you for coming to the city of Jacksonville.

Mr. Wilson:—I presume you thought it was merely an idle invitation when I invited citizens from under any flag to address you. But I want now Mr. Chairman, to call on Colonel Blair, of Nova Scotia, to talk a few minutes on any line that he may desire. We believe in unity and fellowship throughout the entire farming brotherhood.

Colonel Blair:—Mr. Chairman, Ladies and Gentlemen: I am taken very much by surprise at the present moment at being called upon here to speak to the farmers and others of Illinois on any subject whatever.

I happen to know what farm life has been at home. I know what it is down in Nova Scotia where we talk about it being so cold—and my friends here, that I got acquainted with—I want to stop here and tell them that I have lived a great while and can not find people that you can get acquainted with better than the farmers and their wives of Illinois. I came here in this State the 1st of December and have enjoyed myself all the time, and it is going to be very hard when the spring comes to get away and go back. I was thinking yesterday when I saw the snow flying and blowing around, it carried me way back to Nova Scotia, because I got a letter the other day and they have four feet of snow there. It is a good, healthy, striving country. We raise lots of splendid men and women and you have some of them with you here today besides myself. I thank you very much, and when I think of the work you are doing, when I look around and about that great university there, and see that splendid structure erected there to educate the boys and girls of this country to become better farmers, better wives, better mothers, giving them a better opportunity than the fathers and mothers of this country had to become, when they fearlessly faced the wilderness of this country and carved it for posterity, and left it here for you to enjoy hereafter, and for your sons and daughters to enjoy under a better and broader and finer education than they had at that time, I think I can see

the great possibilities of your country, for you have the finest soil probably there is anywhere in the world. For you have been living on that soil a great while, and today you are beginning to realize that no element of fertility than can stand the strain that the soil of Illinois and even some portions of Nova Scotia for one hundred and fifty years have had to stand, and we are seeking for the knowledge and giving the boys and girls the knowledge you are seeking, to enable them to bring back the natural fertility of the soil with a greater degree of rapidity than it has been depleted. And I wish you the greatest success, and the greatest prosperity that a people can possibly have, and I thank you for the very kind hearing you have given me, and if I had time I would like to go a little farther and say some things that are impressed upon my mind so forcibly that when I go back to Nova Scotia I will know more and be a bigger man than I am now with the knowledge that I have received at the University of Agriculture for the last two months, for I am a student there. We are there under Professor Kennedy in his stock judging and teaching and I never enjoyed two weeks better in my life. So men with gray hairs like myself are seeking for knowledge, and I know before I went there and I know now that a man never gets too old to learn. There is always something to learn. I would not give a button for man or woman, even if he was a hundred years old, who couldn't learn anything.

The orchestra from the Institute for the Blind then rendered several selections, thereby closing the session for the afternoon.

FRIDAY EVENING, February 22, 1901.

A most enjoyable and instructive entertainment was given by the pupils of the Institutions for the Education of the Blind and the Deaf and Dumb, to a crowded house.

The program being as follows, that of the Blind under the direction of Dr. Frank Hall, Superintendent, and of the Deaf and Dumb under the direction of Dr. Gordon, Superintendent.

Program for the Blind:

Orchestra; touch reading; chorus; music reading; vocal solo with orchestral accompaniment; date work; violin solo; ear culture; orchestra.

Program for the Deaf and Dumb:

Lip-reading and action work; oral recitation of "America;" a recitation in the sign language, "Sail On, Thou Ship of State;" bounding balls, by little girls; marching calisthenic and Swedish dance; illustrations of oriental forms of worship; mat work and tumbling, by boys.

MINUTES OF MEETINGS OF THE BOARD OF DIRECTORS
AND EXECUTIVE COMMITTEE OF THE ILLINOIS
FARMERS' INSTITUTE FROM FEBRUARY
27, 1900, TO FEBRUARY 26, 1901.

MINUTES OF MEETING OF BOARD OF DIRECTORS.

INSTITUTE ROOM, STATE HOUSE,
February 27, 1900, 3:30 P. M.

The new Board met pursuant to the statutes and was called to order by President G. A. Willmarth, of the old Board.

Director Mills moved that a committee of three be appointed to pass upon the credentials of the newly elected members.

Motion adopted.

The Chairman appointed Directors F. I. Mann, Oliver Wilson and A. P. Grout, as such committee.

The committee appointed, to whom was referred credentials of the newly elected members of the Board, made the following report, which, on motion, was adopted:

To the Board of Directors of the Illinois Farmers' Institute.

GENTLEMEN:—We, your committee, to whom was referred the credentials of the newly elected members of the Board, beg leave to report that we have examined the certificates of election and find them correct, and that the following named persons have been duly elected directors from their respective districts for the ensuing two years:

Seventh District, D. H. Hughes, Antioch, Lake County, Ill.

Ninth District, Amos F. Moore, Polo, Ogle County, Ill.

Eleventh District, G. A. Willmarth, Seneca, LaSalle County, Ill.

Thirteenth District, S. Noble King, Bloomington, McLean County, Ill.

Fifteenth District, G. W. Dean, Adams, Adams County, Ill.

Seventeenth District, Charles F. Mills, Springfield, Sangamon County, Ill.

Nineteenth District, D. H. Shank, Paris, Edgar County, Ill.

Twenty-first District, Walter R. Kimzey, Tamaroa, Perry County, Ill.

Respectfully submitted,

F. I. MANN,
OLIVER WILSON,
A. P. GROUT,

Committee.

The roll of the new Board was then called. Present: Bartlett, Beal, Burroughs, Coolidge, Davenport, Dean, Easterly, Frake, Grout, Gurler, Kimzey, King, Mann, Mills, Moore, Shank, Steenberg, Willmarth, Wilson, Hughes.

Director Kimzey moved that the Board proceed to the election of officers and that a committee of three be appointed by the Chair to act as tellers.

Motion adopted.

The Chairman appointed Directors Kimzey, Burroughs and Wilson as such committee.

Director Shank moved that the election be by ballot and that the first ballot be an informal one.

Motion adopted.

An informal ballot was taken for the office of President, which resulted as follows: G. A. Willmarth, 18 votes; A. P. Grout, 2 votes.

Director Grout then moved that the Secretary be instructed to cast the unanimous vote for G. A. Willmarth for President.

Motion adopted.

The Secretary having cast the full number of twenty votes for G. A. Willmarth, he was declared duly elected President for the ensuing year.

The first or informal ballot for Vice-President resulted as follows: Beal, 11 votes; Kimzey, 6 votes; Grout, 1 vote; King, 1 vote.

SECOND BALLOT.		FIFTH BALLOT.	
Beal.....	8	Beal.....	9
Kimzey.....	9	Kimzey.....	8
Grout.....	2	Grout.....	1
	19	King.....	1
			19
THIRD BALLOT.		SIXTH BALLOT.	
Beal.....	9	Beal.....	13
Kimzey.....	9	Kimzey.....	7
Grout.....	1		20
	19		
FOURTH BALLOT.			
Beal.....	9		
Kimzey.....	8		
Grout.....	1		
Steenberg.....	1		
	19		

Director Kimzey moved that the Secretary be instructed to cast the unanimous vote of the Board for L. N. Beal for Vice-President.

Motion adopted.

The Secretary having announced that he had cast the twenty votes for L. N. Beal for Vice-President, the Chairman declared that L. N. Beal was duly elected Vice-President for the ensuing year.

An informal ballot for Secretary resulted in 18 votes for Hostetter, 1 vote for Wilson and 1 vote blank.

Director Frake moved that the President cast the unanimous vote of twenty votes for A. B. Hostetter for Secretary.

Motion adopted.

The President cast the ballot as instructed and declared Hostetter duly elected Secretary.

An informal ballot for Treasurer resulted in 17 votes for Grout and 2 votes for King.

Director Kimzey moved that the Secretary be instructed to cast the unanimous vote of twenty votes for A. P. Grout for Treasurer.

Motion adopted.

The Secretary cast the twenty votes for A. P. Grout for Treasurer and the Chairman declared A. P. Grout duly elected Treasurer.

An informal ballot for Superintendent resulted in 18 votes for Hostetter, 1 vote for Kimzey and 1 vote blank.

Director Kimzey moved that the Chairman cast the unanimous vote for Hostetter for Superintendent.

Motion adopted.

The chairman cast the vote as instructed, and declared A. B. Hostetter elected superintendent for the ensuing year.

Professor Davenport announced that the president and secretary of the Illinois Association of Domestic Science were in the city and desired a hearing before the Board of Directors of the Illinois Farmer's Institute, at such time as would suit the pleasure of the board.

Director Kimzey moved that the hour of 8 o'clock p. m., be set for meeting the ladies of the Domestic Science Association, and that Professor Davenport so notify them.

Motion adopted.

Director Coolidge offered the following resolution and moved its adoption:

WHEREAS, The Illinois Farmer's Institute learns with deep regret that Professor P. G. Holden is likely to sever his connection with the University of Illinois, to accept an offer to engage in private business at a greatly increased salary, and

WHEREAS, We understand that his going is not from preference for private business, but solely for money, with which to travel and study, to better himself in his chosen field of agriculture; therefore, be it

Resolved, That it is bad public policy for the university of a great State to maintain a schedule of salaries for heads of important departments so low that the best men are attracted unduly into private life in order to earn money with which to advance themselves in their specialties; and be it further

Resolved, That we note with alarm that private and endowed institutions are paying notably larger salaries than the State Universities, and are drawing into their service the best educators, two leading men having been thus taken from our own University within a month; and, be it further

Resolved, That the pay of a teacher should vary with the subject and the individual, but that Illinois should pay as well for expert services as do the universities of neighboring states or the endowed institutions, and that we pledge ourselves to the support of policies looking to a more generous endowment of the State University to the end that the young men and women of the State may stand before the best thinkers with the broadest training; be it further

Resolved, That we recognize agriculture as peculiarly a difficult subject to teach, because it is new and because few men have devoted themselves to its study, all of which greatly limits the supply of available teachers and necessarily increases the expenses of securing and retaining good ones. The desire is earnestly expressed that the University shall at an early date make to

Professor Holden such terms as may induce him to return to his former position in which we feel he has rendered efficient service to the State. This desire is expressed because these are critical days in the development of the college of agriculture; because Professor Holden has proved his fitness for the work of his department; because it would take years for a new man to acquaint himself with Illinois conditions; therefore

Resolved, That a copy of these resolutions be transmitted to the Committee on Agriculture of the Board of Trustees of the University of Illinois.

The motion to adopt resolutions carried.

Director Moore offered the following resolutions and moved their adoption:

WHEREAS, The Trustees of the University of Illinois have favored the Illinois Farmers' Institute and the cause of agricultural education by granting a scholarship in the college of agriculture for each county in the State; and

WHEREAS, It is of great importance that each county should be represented at the State Agricultural College by a student holding such scholarship; therefore, be it

Resolved, That each director be and is hereby requested to spare no effort to have each county in the respective districts represented in the college of agriculture by a student holding said scholarship;

Resolved, That parties receiving said scholarships and failing to enter upon the course of study within thirty days after the opening of the term following their appointment, shall by such failure forfeit the scholarship and said vacancy may be filled at the pleasure of the director of the district.

Resolutions adopted.

Director Charles F. Mills moved the adoption of the following preamble and resolution:

WHEREAS, The Illinois Farmers' Institute, through its board of directors, has awarded scholarships in the college of agriculture at Urbana, to representatives of nearly every county in the State; and

WHEREAS, The recipients of said scholarships receive the benefits and honors resulting therefrom through the operations of the Illinois Farmers' Institute; therefore, be it

Resolved, That it is the sense of this Board that the students receiving such scholarships should read each year a paper at the Institute of the county they respectively represent and make a written report thereto on the condition and work of the college of agriculture at Urbana to the end that greater interest may be developed in the study of agriculture.

Resolution adopted.

Director Kimzey moved to amend section 10 of the by-laws of the Board so that it shall read as follows in the first sentence:

Section 10. An Executive Committee which shall consist of the President of the Board, who shall be chairman of the committee, and four members appointed by the President when he enters upon the duties of his office or as soon thereafter as possible.

Motion to amend adopted by a unanimous vote.

Director Kimzey moved that the first sentence of section 13 of the by-laws be amended to read as follows:

Section 13. In addition to the Executive Committee there shall be appointed at the beginning of each institute year the following committees consisting of four members each appointed by the President and the President of the Board as *ex-officio* member.

Motion to amend adopted by a unanimous vote.

Director Kimzey moved that a committee of three be appointed to formulate the duties of the standing committees not yet provided for in the rules of the Board and to amend the by-laws in compliance therewith.

Motion adopted.

The President appointed Directors Kimzey, Davenport and Grout as such committee.

On motion the Board adjourned to 7:30 p. m.

INSTITUTE ROOM, STATE HOUSE, 7:30 P. M.,
February 27, 1900.

The Board met as per adjournment. Roll call showed the following members present: Bartlett, Beal, Burroughs, Coolidge, Davenport, Dean, Easterly, Frake, Grout, Gurler, Hughes, Kimzey, King, Mann, Mills, Moore, Shank, Steenberg, Willmarth, Wilson.

Mrs. Joseph Carter President, and Mrs. Eugene Davenport Secretary, of the Illinois Association of Domestic Science addressed the Board at some length on the work and needs of the Domestic Science Associations.

Mrs. Carter showed that the interest in domestic science was growing rapidly, that county associations were being organized in all parts of the State, and that both State and county associations were allied with and an essential part of the institute work. She said that efforts had been made to have these organizations become part of other associations of women of the State and United States, but that the ladies of the Illinois Association of Domestic Science preferred and thought that they should stay with and work for the Illinois Farmers' Institute.

Mrs. Davenport showed that the enlarged growth of the domestic science associations called for a larger edition of their bulletins and circular matter and a correspondingly increased work and expenses.

The ladies gratefully acknowledged the pecuniary aid granted by the Board in the payment of their expenses and the purchase and care of the books for the use of the county associations.

The Board approved and applauded the work being done by the ladies, and their allegiance to the Farmers' Institute.

The president thanked the ladies for the work they are doing and for coming before the Board, and assured them that the Domestic Science Association should not be overlooked in the apportionment of the institute funds.

Director Davenport moved that the Illinois Farmers' Institute do not pay the expenses of organizing domestic science associations in counties.

Motion adopted

Director Grout offered the following resolution and moved its adoption:

WHEREAS, Great imposition has been practiced in some cases by county institute officials presenting fraudulent and unjust accounts in connection with the holding of county and congressional institutes; and

WHEREAS, It should be the duty of the director to attend each county and congressional institute in his district, where he can have an opportunity of judging and passing upon the correctness of the bills contracted and presented; therefore, be it

Resolved, That all reports and bills from the county and congressional institutes shall be first presented to the director of each district for his approval or disapproval before the same shall be acted upon by the executive committee of this Board.

Director Wilson moved to amend by striking out the preamble.

Motion to amend adopted.

The resolution as amended was then adopted.

Director Grout offered the following resolution and moved its adoption:

WHEREAS, The funds appropriated by the Illinois Farmers' Institute for the expenses of State speakers at county institutes can be made more effective in promoting the work intended by having said funds under the control of the director of the district; and

WHEREAS, More general publicity should be given the proceedings, and especially the discussions, at county institutes by publication of same in the county papers and the agricultural press; and

WHEREAS, Enlarged and more complete reports of county and congressional institutes should be preserved for the county and State Institute officers and the use of the press; therefore, be it

Resolved, That whatever sum may hereafter be appropriated from the treasury of this board for the purpose of aiding county and congressional institutes shall be placed in charge of the directors and out of this amount the directors shall first employ a competent stenographer who shall report the entire and complete proceedings of every county and congressional institute held in the State, and who shall furnish the institute director and the secretary of the State institute with a full and complete copy of the same.

Resolved, That whatever sum may remain after the employment and payment of such a stenographer, shall be used by the director for the payment of State speakers as heretofore.

Motion to adopt the resolutions was lost.

Director Grout offered the following resolution and moved its adoption:

WHEREAS, A large number of the pages in our annual reports are filled with the detailed minutes of the proceedings of the board of directors and the executive committee; and

WHEREAS, The publication of these minutes, at considerable cost, are not productive of any good purpose whatever; and

WHEREAS, The publication of such minutes occupies space in our reports that should be filled with more profitable, entertaining and instructive matter; therefore, be it

Resolved, That hereafter only the results of our meetings and actions and the reports of our officers and committees be published in our annual reports, to the end that we may present a really valuable volume to the people of the State and of especial value to all interested in agriculture.

Motion to adopt the resolution carried.

Director Kimzey, chairman of the committee to report on amendments to the Rules of the Board, reported as follows:

To the Honorable Board of Directors, State Farmers' Institute.

GENTLEMEN:—We, your committee appointed to amend section 13 of the by-laws by suggesting additional standing committees and defining the duties of the same, do submit the following:

Amend by adding to section 13 articles 4, 5, 6, 7, 8.

Art. 4. An Auditing Committee, whose duty shall be to examine the books and records of the secretary and treasurer and make a detailed report to the Board of Directors at their annual meeting, and at other times when requested to do so by the Board, and show the amounts against which no warrants have been drawn remaining under the various appropriations.

Art. 5. A Committee on Organizing Township Institutes, who shall assist in promoting the interest in township meetings throughout the State.

Art. 6. A Committee on Special Features for Improving County Institutes, whose duty it shall be to suggest new features and plans for the various institutes.

Art. 7. A Committee on Domestic Science, whose duty it shall be to consult with the State Domestic Science Association and to assist in pushing their work in the State.

Art. 8. An Agricultural, Education and Library Committee, to especially assist in pushing the circulating libraries and selecting others to be placed in the field.

On motion the amendments were adopted unanimously.

Director Coolidge moved that a committee of three be appointed to wait upon the Secretary of State to secure an early publication of Volume V of the Institute Report.

Motion adopted.

The president appointed Directors Coolidge, Moore and Mills as such committee.

Director Mills called for the reading of a resolution adopted at the State meeting at Mt. Vernon in regard to appointing committees to interest the young people in the institute meetings. After the secretary read the resolutions Director Mills moved that they be approved by the Board.

Motion adopted.

Director Moore called for the reading of the resolution adopted at the State meeting at Mt. Vernon, in regard to the county institutes cooperating with the director of the experiment station. After reading it, Director Mills moved that the secretary be instructed to send a copy of it to each county.

Motion adopted.

Director Mills moved that an appropriation for the county institutes for payment of speakers be made the same as last year.

Motion lost.

President Willmarth announced that all standing committees would hold over until the new committees could be appointed.

On motion of Director Beal the Board adjourned.

Read and approved June 28th, 1900.

G. A. WILLMARTH,
President.

A. B. HOSTETTER,
Secretary.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE.

INSTITUTE ROOM,
February 28, 1900, 8:30 a. m.

The Executive Committee of the Illinois Farmers' Institute met on call of the chairman. Present: Chairman Willmarth, and Directors Beal, Kimzey and Shank.

Director Beal moved that the bill of Mrs. Rose Carr for organizing associations of domestic science in the 19th district be referred to Mrs. E. Davenport, Secretary of the Illinois Association of Domestic Science, for approval.

Motion adopted.

Director Kimzey moved that the bill of Carroll County Farmers' Institute for \$50.00 for the expenses of an institute held June 23-24, 1899, be allowed and paid out of the miscellaneous fund.

Motion adopted.

The following bills were audited and warrants ordered drawn for the same:

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, have duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1227	Treas. DeKalb Co. F. Inst. and 8th District Inst., B. F. Wymann.....	\$50 00
1228	Mrs. S. Noble King, expenses as speaker, State Meeting.....	19 35
1229	J. H. Coolidge, expenses as director.....	51 84
1230	S. Noble King, ...	9 35
1231	H. G. Easterly, ...	59 55
1232	A. P. Grout, ...	31 90
1233	Amos F. Moore, ...	86 67
1234	E. W. Burroughs, ...	8 10
1235	E. W. Burroughs, ...	16 50
1236	L. N. Beal, ...	23 90
1237	W. R. Kimzey, ...	33 54
1238	A. N. Talbot, expenses as speaker at State Meeting.....	9 30
1239	D. H. Shank, expenses as director.....	15 40
1240	G. A. Willmarth, ...	22 50
1241	C. D. Bartlett, ...	31 60
1242	H. D. Hughes, ...	21 21
1243	G. H. Gurler, ...	40 88
1244	G. W. Dean, ...	30 20
1245	F. I. Mann, ...	37 72
1246	James Frake, ...	38 24
1247	Oliver Wilson, ...	57 17
1248	E. Davenport, ...	20 54

1249	Mrs. E. Davenport, expenses Illinois Association Domestic Science.....	\$9 30
1250	Mrs. Joseph Carter, ...	9 30
1251	Mrs. E. Davenport, ...	14 54
1252	Mrs. J. R. Challacomb, ...	9 90
1253	G. W. Willmarth, expenses as director.....	10 50
1254	Treasurer Carroll Co. Farmers' Institute, John Simpson.	50 00
Total.....		\$813 80

Approved February 28, 1900.

G. A. WILLMARTH,
L. N. BEAL,
W. R. KIMZEY,
D. H. SHANK,

Executive Committee.

On motion of Director Beal Committee adjourned subject to the call of the Chairman.

Read and approved June 28, 1900.

A. B. HOSTETTER,
Secretary.

G. A. WILLMARTH,
President.

DUNLAP HOTEL, JACKSONVILLE, ILL.,

April 17, 1900, 7:30 P. M.

The Executive Committee of the Illinois Farmers' Institute met as per adjournment. Present: Directors Willmarth, Kimzey, King, Beal, and Shank.

The minutes of the meeting of February 28, 1900, were read and approved.

The Secretary read the following bond of A. P. Grout, as Treasurer:

Know all Men by these Presents: That we, Albert P. Grout, as principal, and C. H. Condit, Wm. Neat and Joseph V. Carpenter, as sureties, all of the county of Scott and State of Illinois, are held and firmly bound unto the Illinois Farmers' Institute, a public corporation of this State, in the penal sum of twenty thousand (\$20,000) dollars, lawful money of the United States, to be paid to the said Illinois Farmers' Institute for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors and administrators, severally and firmly, by these presents.

Signed with our hands and sealed with our seals this —day of March, A. D. 1900.

The condition of the foregoing obligation is such that, whereas, the above bounden Albert P. Grout was on the 27th day of February, A. D. 1900, duly elected treasurer of said Illinois Farmers' Institute, for the period of one year, expiring February 28, A. D. 1901, and required to give bond in the penal sum of \$20,000.

Now, therefore, the condition of this obligation is such that if the said Albert P. Grout shall faithfully perform and discharge the duties of his office as treasurer of the said Illinois Farmers' Institute, and safely keep all money and other property entrusted to his care as treasurer, paying the same out when ordered by the Board of Directors of the Illinois Farmers' Institute, and perform all duties required of him as such treasurer by the Board of Directors of the said Illinois Farmers' Institute, and at the expiration of his term of office as such treasurer pay over to his successor in office, when appointed and qualified, or to such other person or persons as the Board of

Directors of said Illinois Farmers' Institute may direct or require, all moneys and other property then remaining in his hands as such treasurer, then this obligation to be void, otherwise to remain in full force and virtue.

ALBERT P. GROUT, (Seal.)
 WILLIAM NEAT, (Seal.)
 CHARLES H. CONDIT, (Seal.)
 JOS. V. CARPENTER, (Seal.)

STATE OF ILLINOIS, } ss.
 SCOTT COUNTY,

Before me, Alonzo Ellis, a notary public in and for said county, this day appeared Albert P. Grout, William Neat, Charles A. Condit and Jos. V. Carpenter, to me personally known to be the persons whose names are signed to the foregoing instrument in writing, and acknowledged that they executed the same for the uses and purposes therein stated.

Given under my hand and official seal this —day of —, A. D., 1900.

ALONZO ELLIS,
Notary Public.

Director King moved that the bond be approved and accepted.

Motion adopted.

The secretary presented a large list of papers read at county and district institutes, which had been recommended for publication in the annual report. The committee after considering and adopting a number of them, on motion of Director Kimzey, took a recess till 8:30 a. m., April 18.

DUNLAP HOTEL, JACKSONVILLE,
 April 18, 1900, 8:30 a. m.

Committee met as per adjournment. The same members present as at the previous session.

President Willmarth made a verbal report that he had been invited by the secretary of the National Association of Institute Workers and the superintendent of the Wisconsin Farmer's Institutes, Mr. George McKerrow, to have the Illinois Farmer's Institute represented at the annual meeting of the National Association, and also to attend the Wisconsin Round Up Institute, both to be held at Delavan, Wis., March 13 to 16, inclusive. The National Association of Institute Workers being composed of the superintendents of institutes, presidents and leading institute workers of the United States and Canada, and being called to meet so near our own State, President Willmarth thought that the Illinois Farmer's Institute should be represented at this annual meeting, especially as the delegate could at small additional expense, attend the Round Up meeting of Wisconsin institutes. Secretary Hostetter being busy with office work pertaining to the annual report, the president decided to represent the Illinois Farmer's Institute at these meetings, and therefore attended the same on the 13th, 14th, 15th and 16th days of March. He reported that he met at this meeting many of the institute workers of several states and Canada, and had learned many things that he trusted would be of value to the Illinois Farmer's Institute in its work the ensuing year. He presented a bill of \$21.00 for the expenses of this trip.

Director Kimzey moved that the action of the president and his report of attending the National Association of Institute Workers be approved and that his bill for expenses of same be allowed.

Motion adopted.

Director King moved that ten full page illustrations, showing the development along agricultural lines in Illinois, be used in the forthcoming annual report.

Motion adopted.

Director Kimzey moved that a committee of one be appointed to act with the president and secretary in selecting the pictures and the balance of the papers to be used in the report.

Motion adopted.

The chair appointed Director Kimzey as such committee.

Director King moved that the sub-committee be authorized to close contract, if necessary, for printing illustrations.

Motion adopted.

Director King moved that the pictures of the officers of the institute be inserted in the report, and also the pictures of the several directors in connection with their reports, and the pictures of the presidents of county farmers' institutes, so far as they may desire to have the same published.

Motion adopted.

During the meeting the following bills were audited and warrants ordered drawn in payment of same:

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the several claimants for the following amounts:

1255	Treasurer Ogle County Farmers' Institute, Alvin Joiner.....	\$75 00
1256	.. .. .. .. ..	20 00
1257	.. Knox County .. H. M. Slason.....	83 60
1258	.. Henry County .. George Ferguson.....	87 25
1259	.. Hancock County .. C. N. Dennis.....	37 38
1260	.. McDonough County .. Fred G. Miner.....	28 28
1261	.. Vermillion County .. David M. Fowler.....	10 00
1262	.. Shelby County .. J. W. Middlesworth.....	35 29
1263	.. Putnam County .. F. E. Smith.....	56 86
1264	.. Platt County .. J. P. Ownby.....	59 02
1265	.. Logan County .. J. A. Critchfield.....	95 00
1266	American Express Co.....	15 89
1267	Pacific Express Co.....	11 60
1268	Adams Express Co.....	21 20
1269	Western Union Telegraph Co.....	54
1270	Central Union Telephone Co.....	1 60
1271	Edw. F. Hartman Co., printing and postage.....	60 90
		\$728 76

Approved April 17, 1900.

G. A. WILLMARTH,
WALTER R. KIMZEY,
S. NOBLE KING,
L. N. BEAL.

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1272	G. W. Dean, expenses as director to 15th District Conference.....	\$5 26
1273	A. R. Sticle, expenses as delegate	1 50
1274	S. N. Black, ...	3 66
1275	Eli Dixon, ...	1 50
1276	F. E. Smith, ... 14th	7 47
1277	J. B. Vanderventer 15th	5 50
1278	Valentine Graff, ... 14th	2 35
1279	Chas. Himmel, ...	2 51
1280	Henry Riley, ...	3 40
1281	Lester Held, ...	3 15
1282	Oliver Wilson, expenses as director	6 22
1283	C. F. Woodman, ... delegate	2 00
1284	John T. Galbraith, ... 22d	1 00
1285	Mrs. W. J. Casper, ...	4 00
1286	Geo. C. Schneeman	7 63
1287	W. H. Ried, ...	2 10
1288	George Biatler, ...	6 98
1289	L. J. Hess, ...	2 26
1290	F. E. Graves, ...	4 90
1291	J. M. Miner, ... 13th	3 00
1292	Joseph Coombe, ...	2 30
1293	Isaac S. Raymond, ...	1 85
1294	W. S. Oglevee, ...	2 90
1295	C. J. Bear, ...	2 24
1296	S. Noble King, expenses as director	11 43
1297	Dwight Herrick, expenses as delegate to correct war. 719.....	27
Total.....		\$97 38

Approved this 17th day of April, 1900.

G. A. WILLMAREH,
WALTER R. KIMZEY,
S. NOBLE KING,
L. N. BEAL,
D. H. SHANK.

1298	A. J. Yates, expenses as delegate to 20th District Conference.....	\$3 77
1299	Ed. Schneider, ...	8 74
1300	F. A. West, ...	4 05
1301	Ezekiel Hunsinger	5 45
1302	S. T. Maxey, ...	3 00
1303	Isaac W. Jaques, ...	5 97
1304	L. N. Beal, ... director	20 00
1305	L. N. Beal, ...	10 00
1306	Robt. C. Morris, ... delegate to 19th	4 00
1307	J. M. Hollinsworth, ...	11 92
1308	J. Q. Snedeker, ...	4 00
1309	W. E. Neal, ...	5 30
1310	A. H. Yanaway, ...	2 03
1311	T. L. Endsley, ...	5 42
1312	Mrs. S. Rose Carr, ...	6 09
1313	Sanford S. Reinochl, ...	5 62
1314	D. H. Shank, ... director	6 25
1315	E. Davenport, ...	6 72
1316	Mrs. Joseph Carter, ... Domestic S. Ass'n.....	5 70
1317	Mrs. E. Davenport, ...	5 95
1318	Mrs. S. Rose Carr, ...	5 00
1319	Mrs. Sara Steenberg, ... director.....	43 65
1320	A. B. Hostetter, postage Secretary's office.....	10 00
1321	F. M. Higgins, expenses as speaker State Institute.....	18 40
1322	Hector Stryckmann, stenographer, report State Institute.....	55 00
1323	A. B. Hostetter, salary for February and March, 1900.....	250 00
1324	Treasurer Johnson Co. Farmer's Institute, D. W. Mathis.....	36 34
Total.....		\$548 37

Approved April 18, 1900.

G. A. WILLMARTH,
S. NOBLE KING,
WALTER R. KIMZEY,
L. N. BEAL,
D. H. SHANK.

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1325	G. A. Willmarth, expenses as director.....	\$21 00
1326	G. A. Willmarth, ...	20 00
1327	L. N. Beal, ...	16 50
1328	S. Noble King, ...	8 09
1329	D. H. Shank, ...	18 80
1330	G. A. Willmarth, ...	27 50
1331	A. B. Hostetter, expenses attending Executive Committee meeting.....	5 40
Total.....		\$117 29

Approved April 18, 1900.

G. A. WILLMARTH,
L. N. BEAL,
WALTER R. KIMZEY,
D. H. SHANK,
S. NOBLE KING.

Director Kimzey moved that the secretary be instructed to take a membership for the Illinois Farmers' Institute in the National Association of Institute Workers and forward to the secretary of said association the required membership fee of five dollars.

Motion adopted.

On motion of Director Beal the committee adjourned subject to the call of the chairman.

Read and approved June 28, 1900.

A. B. HOSTETTER,
Secretary.

G. A. WILLMARTH,
Chairman.

INSTITUTE ROOM, STATE HOUSE,
June 8, 1900—10:30 O'clock A. M.

The Executive Committee of the Illinois Farmers' Institute met as per the call of Chairman Willmarth. The following members answered to roll call: Beal, King, Shank and Willmarth.

The minutes of the meeting of the committee at Jacksonville on April 17, 1900, were read and approved.

The following bills were presented and audited and warrants drawn in payment of same:

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1332	G. A. Hunt, Greenwood, expense delegate to 8th district conference.....	\$3 00
1333	Alonzo Stansel, Yorkville, ...	2 00
1334	W. A. Clark, Carbon Hill, ...	3 00
1335	B. F. Wyman, Sycamore, ...	2 00
1336	C. D. Bartlett, ...	8 00
1337	Wilber P. Snare, Toulon, expense delegate to 10th district conference.....	4 08
1338	D. L. Kelcher, Orion, ...	2 47
1339	W. H. Wheaton, Reynolds, ...	6 32
1340	A. L. Woodhams, New Windsor, ...	1 23
1341	C. W. Mitchell, Round Grove, ...	6 52

1342	W. E. Killan, Tower Hill, expense delegate to 15th district conference.....	3 75
1343	L. S. Dorsey, Moro, ...	2 35
1344	E. P. Gracey, Sorrento, ...	1 99
1345	W. L. Rhodes, Bethany, ...	6 24
1346	E. C. Richards, Hillsboro, ...	1 85
1347	E. W. Burroughs, Edwardsville, ...	7 41
1348	F. Helms, Sr., Belleville, expense delegate to 21st district conference.....	2 59
1349	G. Johnpeter, Posey, ...	5 00
1350	A. V. Schermerhorn, Kinmundy, ...	4 00
1351	W. R. Kimzey, ...	3 25
1352	W. R. Kimzey, expense director Executive Committee meeting.....	17 28
1353	W. R. Kimzey, ...	18 41
1354	Isaac Boys, Metamora, expense delegate to 11th district conference.....	2 88
1355	L. R. Bryant, Princeton, ...	4 97
1356	J. W. McDowell, Fairbury, ...	2 50
1357	J. T. Foster, Elkhart, expense delegate to 17th district conference.....	1 20
1358	B. F. Workman, Auburn, ...	85
1359	H. A. Ward, Petersburg, ...	1 19
1360	S. C. Wagener, Pana, ...	2 40
Total		\$128 64

Approved June 8, 1900.

G. A. WILLMARTH,
D. H. SHANK,
S. NOBLE KING,
L. N. BEAL.

The secretary presented a letter and a bill from Hughes Brothers, of Clinton, Ill., for printing done in January, 1897.

On motion of Director King the same was referred to the full Board for consideration.

To the Board of Directors of the Illinois Farmer's Institute:

The undersigned members of the executive committee having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1361	Mrs. E. Davenport for Illinois Association Domestic Science.....	\$10 00
1362	Mrs. Sara Steenberg, expenses as director.....	10 91
1363	G. W. Dean, expenses as director.....	16 20
1364	Central Union Telephone Co.	45
1365	Adams Express Co.	2 08
1366	American Express Co.	2 82
1367	John Underfanger drayage.....	75
1368	The Runder Trunk Co., repairs library cases.....	80
1369	Membership fee National Association Institute Workers.....	5 00
1370	Henry Furgerson, janitor service.....	5 15
1371	A. B. Hostetter, salary for April and May, 1900.....	250 00
1372	A. B. Hostetter, expenses committee meetings and postage.....	83 80
1373	C. H. Scott, treasurer Macon County Farmer's Institute.....	75 09
1374	C. H. Scott, treasurer Macon County Farmers Institute.....	20 00
1375	Treasurer Gallatin County Farmer's Institute, W. A. Peeples.....	75 00
1376	Treasurer Gallatin County Farmer's Institute, W. A. Peeples.....	2 70
1377	G. A. Willmarth, expense as director.....	67 11
1378	.....	48 75
1379	S. Noble King	5 75
1380	D. H. Shank	12 10
1381	G. A. Willmarth, expense as director.....	17 75
1382	L. N. Beal	16 75
Total		\$678 87

Approved June 8, 1900.

G. A. WILLMARTH,
D. H. SHANK,
S. NOBLE KING,
L. N. BEAL.

Director King moved that the secretary be instructed to confer with the secretary of the Board of Trustees of the University of Illinois in regard to preparing a list of questions to be answered by applicants for scholarships in the college of agriculture, the same for the use of the directors of the Farmer's Institute in making the awards.

Motion adopted.

Director King moved that the secretary be instructed to insert the report of the Sullivan Township Farmer's Club in the annual report after the report of Ford county.

Motion adopted.

On motion of Director King the committee adjourned.

Read and approved June 28, 1900.

G. A. WILLMARTH,
President.

A. B. HOSTETTER,
Secretary.

INSTITUTE ROOM,
June 28, 1900, 1:30 p. m.

The Board of Directors of the Illinois Farmer's Institute met as per call of President Willmarth. Roll call showed the following directors present: Bartlett, Beal, Burroughs, Coolidge, Davenport, Dean, Easterly, Frake, Goodwin, Grout, Hughes, Kimzey, Moore, Shank, Willmarth, Wilson. The minutes of the meetings of the Board of Directors of February 27, 1900, and of the meetings of the Executive Committee of February 28th, April 7th and June 8th, 1900, were read and approved.

On motion of Director Frake the actions of the Executive Committee were approved.

The several standing committees reported as follows. Which reports and recommendations contained therein were on motion adopted by the board:

To the Hon. Board of Directors of the Illinois Farmer's Institute.

GENTLEMEN: The first question to be decided in regard to the State Institute Meeting being the place of holding same, your committee instructed the secretary to send out the following letters:

SPRINGFIELD, ILL., May 18, 1900.

DEAR SIR:—Inclosed please find invitation for bids for the location of the annual meeting of the Illinois Farmer's Institute. It is the desire of the committee to interest the citizens of every important city in the State, having good hotel and railroad facilities, in the competition for the location of this annual meeting.

We trust you will call the attention of your city board, your Business Men's Association, your local press and your enterprising citizens to this

matter at once and that we may receive an application as per the conditions herewith inclosed from your enterprising city. In behalf of the State Institute Meeting Committee, I am

Yours respectfully,

A. B. HOSTETTER,
Secretary.

SPRINGFIELD, ILL., May 18, 1900.

To the Mayors of the Cities of Illinois.

The Illinois Farmer's Institute invites bids from such cities as may desire to secure the location of the next annual meeting, to be held on Tuesday, Wednesday and Thursday, February 19, 21 and 21, 1900.

The meetings are of interest to the people of all parts of the State, and are held for practical instruction in matters pertaining to farm and home life, and for developing the agricultural resources of the State. The city asking for the location will be required to file with the application pledges in writing to fulfill the following conditions free of charge to the State Institute.

First.—To furnish suitable halls, heated, lighted and decorated. One in which to hold the eight sessions of the Illinois Farmer's Institute, one in which to display an exhibit of farm products, furnished with tables for such exhibits, and one for the meetings of the Illinois Domestic Science Association and overflow meetings of the Institute.

Second.—To provide music for the several sessions, and a local committee to look after the same.

Third.—To file rates to be charged by hotels and boarding houses for the entertainment of delegates and visitors to the meeting.

Fourth.—To provide efficient local committees to assist in advertising, receiving visitors and such other purposes as the State Institute Committee may deem necessary.

Fifth.—No bid will be considered unless pledges in writing be given of an open railroad rate, not to exceed one and one-third fare for the round trip.

Sixth.—All bids to be mailed to the secretary of the Illinois Farmer's Institute not later than June 15, 1900.

The Institute reserves the right to reject any or all bids.

OLIVER WILSON,
Chairman of Committee.

A. B. HOSTETTER,
Secretary.

In reply to these communications applications have been received from the cities of Jacksonville, Morgan county, Decatur, Macon county, Champaign, Champaign county, Galesburg, Knox county, Paris, Edgar county and Quincy, Adams county,

Notice was sent to these cities that a selection of a location would be made by the board of directors on June 28th, and that cities so desiring could present their claims before the board at 8 o'clock p. m., June 28, 1900.

We recommend that after a selection of a location is made by the board, the committee or a sub-committee of the State Institute meeting with the superintendent of institutes visit the location selected and ascertain if all requirements for the State meeting can be satisfactorily met before final acceptance of the location.

We recommend that the number of sessions of the State meeting be increased by beginning on Tuesday, the usual time in February, and extending the time to Friday afternoon, and that the Domestic Science Association sessions be held as part of the regular program and not as separate meetings as heretofore. As the make up of the program for the State meeting will depend somewhat upon the location, and our past experience has proven that definite arrangements can not be made with speakers so far ahead, your committee ask for further time in which to complete the program for the State meeting.

We would also recommend that exhibits except such as can be installed in the general audience room and used to illustrate subjects on the program be dispensed with at the annual meeting.

Respectfully submitted,

OLIVER WILSON,
G. A. WILLMARTH,
E. DAVENPORT,
E. W. BURROUGHS.

REPORT OF COMMITTEE TO SELECT SPEAKERS FOR COUNTY INSTITUTES.

To the Board of Directors of the Illinois Farmers' Institute:

Esteemed Friends:—Your committee to select speakers to recommend to county institutes beg leave to report that the recommendation of speakers is a delicate matter, involving, as it does, both the good of the institutes and the wishes of the speakers and their friends.

As the first step in securing a list of known desirable speakers, the following letter was mailed to the members of this Board and to the president and secretary of each county institute of the State:

SPRINGFIELD, ILL., March 31, 1900.

Dear Sir:—It is the desire of Director J. H. Coolidge, chairman of the committee to select speakers to recommend to county farmers' institutes, that the committee have full information in regard to the qualifications and ability of such recommended institute workers.

Will you kindly assist in this work by giving on the enclosed blank the names of the speakers that you can recommend, those who have proved most satisfactory and helpful to the people attending your institutes?

The committee wishes to know of all those who have the ability to command the attention of an audience, and who can give practical instruction and suggestions that will lead to better methods of farming, better homes, and higher manhood and womanhood.

Any criticism that you may offer upon speakers will be held in confidence and used only to promote the good of the institutes.

Please fill out the blanks and return at once to the undersigned.

A. B. HOSTETTER,
Secretary.

In response to this letter, a large number of names were received of parties who had proved themselves capable institute speakers, who had done good service at the several county and district institutes.

From this extended list of speakers the committee selected a large number, to whom the following letter was mailed, with a blank upon which to report the subjects, terms, etc., of the party addressed:

SPRINGFIELD, MAY 4, 1900.

Dear Sir:—You have been recommended to the committee of the Illinois Farmers' Institute to select speakers for county institutes, as a person capable of speaking and reading papers at institute meetings.

In order that the committee may submit a list of speakers to the Board of Directors for approval, will you kindly fill out the inclosed blank and return it at once in the inclosed addressed envelope?

Please be particular to give your postoffice address in full, and state whether or not you can attend institutes outside your own county.

If more than railroad and hotel expenses are asked, state the amount for each institute, or paper read. Give list of subjects, those upon which you have technical knowledge or practical experience, preferred.

Give the number of minutes it requires to read your paper or deliver your address and whether charts or other means of illustration are used, bearing in mind that as a rule no institute paper or address should occupy more than 30 minutes, and that 20 minutes for paper and 10 minutes for discussion is better.

The largest halls obtainable are required for institute meetings, and they are usually crowded. We therefore suggest that unless you have sufficient strength of voice to be heard in any part of the audience room, you do not engage as an institute speaker.

Trusting we may receive a favorable reply and have the pleasure of your help at the institute the coming season, I am, in behalf of the committee,

Very truly yours,

A. B. HOSTETTER,
Secretary.

In response to this second letter, 125 replies were received. Some speakers declined to be placed on the list or to go outside their own counties; some offered to attend institutes for their expenses and some asked compensation for their services, such compensation ranging from one to twenty-five dollars per day.

Your committee, after a careful canvass of the entire list of speakers and the recommendations and opinions of the county institute officers in regard to home and outside speakers, paid and unpaid, have decided to recommend the following lists of speakers, selected on account of their technical knowledge and practical experience upon the subjects named, and also on account of their availability as to location.

Respectfully submitted,

J. H. COOLIDGE,
H. G. EASTERLY,
G. A. WILMARTH,
Committee.

List of speakers who will attend farmers' institutes outside their own counties on payment of their traveling and hotel expenses:

S. H. BARKER, Parkersburg, Richland County.

Subjects—The Hog.
Peas for Feed.

MRS. JENNIE BARLOW, Bloomington, McLean County.

Subject—How Shall We Live?

GEORGE BARRINGER, Jonesboro, Union County.

Subjects—Wheat and Wheat Culture (as to classification of soils).

ALFRED BAYLISS, State Superintendent of Public Instruction, Springfield.

Subject—The Country School. (30 minutes.)

JOHN M. CLARK, Director 4th District, 960 Warren ave., Chicago.

Subjects—Hay and Pasture Seeding—Special Formula.
The Value of Commercial Fertilizers. (15 to 20 minutes.)

MRS. MINNIE L. COPELAND, Marion, Williamson County.

Subjects—Educational Side of Farm Life.
Home Influences.
Home Economy. (20 minutes.)

E. E. CHESTER, Champaign, Champaign County.

Subjects—Live Stock vs. Grain Farming.

Cattle.

Farm Horses.

Pastures and Meadows.

Cross Breeding in Farm Animals.

Land Owner and Tenant.

Sheep in the Corn Belt. (20 minutes or more each.)

MRS. J. M. CLARK, Sparta, Randolph County.

Subjects—Flowers.

Order in the Home; or, Systematic Housekeeping. (20 min.)

TAYLOR C. CLENDENEN, Cairo, Alexander County.

Subjects—The Farmer and Education.

Social Evolution; or, From Country to City and the Result.
(20 to 30 minutes.)

EUCLID N. COBB, Monmouth, Warren County.

Subjects—Dairying—Up-to-dates Methods.

Care of Dairy Herds.

Breeding and Feeding.

Nutriments of Feeds and their Economic Relations to all Farm Animals.

Silos Building and Filling.

Artificial Incubation and Care of Fowls.

Use charts and illustrations. (Each 15 to 30 minutes.)

IRA COTTINGHAM, Eden, Peoria County.

Subjects—Economic Poultry Raising.

Waste on the Farm.

Profitable Swine Breeding.

Use charts and models in the first and last subjects. (20 minutes.)

W. C. DAVIS, Fairfield, Wayne County.

Subjects—Silos and Ensilage.

Breeding and Feeding the Dairy Cow.

Manures of the Farm and Dairy.

Use models and charts to illustrate. (20 minutes.)

GEORGE W. DEAN, Adams, Adams County.

Subjects—Corn Culture. Illustrated by samples.

Good Roads.

Leaks on the Farm.

The Boy on the Farm. (20 to 30 minutes.)

E. H. DIEHL, Leesburg, Fulton County.

Subjects—The Grasses.

Pastures—their Care and Use.

Farm Dairying. (15 to 20 minutes.)

A. H. FLOYD, Goleconda, Pope County.

Subjects—Wheat Raising.

Improving and Maintaining the Fertility of the Soil. (About 20 minutes.)

BLAINE FITCH, Cobden, Union County.

Subjects—Asparagus, Starting a Field, Culture and Marketing.

Rhubarb, Cultivating and Marketing. (15 minutes.)

J. B. FRISBIE, Mendon, Adams County.

Subjects—The Farmer's Garden.

Extensive vs. Intensive Farming.

The Farmer and the Newspaper.

FRANK H. HALL, Superintendent of the Blind, Jacksonville, Morgan County.

Subject—Education of Prospective Farmers. (Time to suit program committee.)

LEON HAY, Kankakee, Kankakee County.

Subjects—Farm Drainage.

The Treatment of Unproductive Black Soil Commonly Called "Alkali Lands."

The Most Wonderful Plant.

The Undeveloped Resources of Illinois.

Roads and their Management.

The Sugar Beet in Illinois. (Each 20 to 30 minutes.)

HARDY F. HILL, Charleston, Coles County.

Subjects—Small Fruits and How to Grow Them.

Incubators and Brooders, with charts to illustrate. (20 to 30 minutes.)

CHARLES E. HIMMEL, Bishop, Mason County.

Subjects—Fruit for the Farm.

The Farmer and His Home. (25 minutes.)

A. A. HINCKLEY, DuBois, Washington County.

Subjects—Leguminous Crops, Experience with in 1900. (20 minutes.)

H. D. HUGHES, Director Seventh District, Antioch, Lake County.

Subjects—Dairying on the Farm.

Keeping a Flock of Breeding Ewes at a Profit.

The Silo and Its Use.

Good Roads. Will use charts. (15 to 30 minutes.)

E. R. JINETTE, Anna, Union County.

Subjects—Tomato Gardening for Market.

Melon Gardening for Market.

Truck Farming. (15 minutes.)

L. H. HERRICK, Bloomington, McLean County.

Subject—Beef Cattle. (20 to 30 minutes.)

S. NOBLE KING, Director 13th District, Bloomington, McLean County.

Subject—Draft Horses.

D. S. MACKAY, Mount Carroll, Carroll County.

Subject—Corn Fodder, Its Value, Care and Management. (25 minutes.)

CHARLES F. MILLS, Director 17th District, Springfield, Sangamon County.

Subjects—Agricultural Fairs.

Coöperation among Farmers.

County Farmers' Institutes.

Township Farmers' Institutes.

Breeding Improved Stock.

ISRAEL MILLS, Clay City, Clay County.

Subjects—Stock Growing.

Cattle Feeding. (10 to 20 minutes.)

L. W. MITCHELL, Dixon, Lee County.

Subject—The Cow and her Feed. Use charts. (30 minutes or more.)

M. MAURY NASH, Cambridge, Henry County.

Subjects—Breeding and Care of Hogs.

Silos, Storing and Feeding of Ensilage and its Relative Value.

Curing of Seed Corn and Cultivation of Crop. (20 to 25 minutes.)

CLAYTON C. PERVIER, Sheffield, Bureau County.

Subjects—Clover, Its Value on the Farm.
The Education of the Farmer.
The Care and Feeding of Hogs for Market. (30 minutes.)

ISAAC S. RAYMOND, Philo, Champaign County.

Subject—A Farm and its Management. (25 minutes.)

WILLIAM RINGLE, Osce, Henry County.

Subjects—Corn Culture.
Organizing and Management of Mutual Telephone Companies.
Small Fruit Culture. (20 minutes.)

WILLIAM H. ROWE, Jacksonville, Morgan County.

Subjects—Corn.
Clover.
Hogs. (30 minutes.)

C. D. SMITH, Grandview, Edgar County.

Subject—How to Secure a stand of Clover. (20 minutes.)

MRS. J. J. SOUTHWORTH, Allerton, Vermilion County.

Subjects—Domestic Science.
Farm Homes.
Better Education for the Country Boys and Girls. (20 minutes.)

J. W. STANTON, Richview, Washington County.

Subjects—Cow Peas as a Fertilizer.
Orchards and Small Fruits.
Spraying Orchards. (20 minutes.)

R. J. STONE, Stonington, Christian County.

Subjects—Sheep a Specialty.
The Modern "Bo Peep." (20 minutes.)

ARTHUR WARE, Butler, Montgomery County.

Subjects—General Farming.
Farm Drainage.
The Farm Telephone. (20 minutes.)

J. C. WARE, Champaign, Champaign County.

Subjects—Practical Horse Breeding.
Practical Poultry Production.

F. A. WARNER, Sibley, Ford County.

Subjects—The Farmer and His Son, Both Sides of the Question.
Cost of Growing Corn by Actual Test. Illustrated by charts.
Farming, What it is. (20 to 30 minutes.)

V. G. WAY, Proctor, Ford County.

Subjects—Subsoiling as a Means to an End.
Building Dirt and Hard Roads.
Practical Hog Raising with Corn and Grass.

W. T. WHITE, Cutler, Perry County.

Subjects—Winter Wheat.
Poultry on the Farm. (20 minutes.)

J. W. WHITSON, Rushville, Schuyler County.

Subjects—Farm Mutual Insurance.

Crop Rotation.

Some Items of Profit in Farming. (20 minutes.)

G. A. WILLMARTH, President of Illinois Farmers' Institute, Seneca, LaSalle County.

Subjects—The Breeding and Management of Swine.

Agricultural Education.

The Horse for the Farm to Raise to Make the Most Money. (30 minutes.)

B. F. WYMAN, Sycamore, DeKalb County.

Subjects—Special versus General Farming.

Good Roads.

The Importance of Poultry on the Farm.

Corn and its Commercial Products. 30 products exhibited. (20 minutes.)

A. J. YATES, McLeansboro, Hamilton County.

Subjects—The Cultivation of Corn.

Preparing for Spring Crops.

The Best Way to Overcome Drought. (20 minutes.)

MRS. H. D. YOUNG, Sibley, Ford County.

Subjects—Farm Life and the Farmer's Wife.

Poultry Raising. (20 minutes.)

The following members of the faculty of the University of Illinois will give as much of their time as possible to Institute work, but require that ample notice be given when their services are desired. They ask no compensation other than traveling and hotel expenses:

THOMAS J. BURRILL, Ph. D. LL. D., Professor of Botany and Horticulture, Urbana.

Subject—On Application.

STEPHEN A. FORBES, Ph. D., Urbana, Professor of Zoölogy and State Entomologist.

Subjects—Insects Injurious to Corn.

The Principal Insects Injurious to Forage Plants.

Insect and Fungus Pests to Fruit in Southern Illinois.

Principal Insect Enemies of Wheat.

DOLAND McINTOSH, V. S., Urbana, Professor of Veterinary Science.

Subjects—Diseases of Digestive Organs of the Horse.

Diseases of Digestive Organs of Cattle.

Wounds and How to Treat Them.

How to Keep Horses' Feet Healthy.

ARTHUR WILLIAM PALMER, Sc. D., Urbana, Professor of Chemistry.

Subjects—Water Supplies for Man and Stock.

Certain Adulterations of Common Foods.

DAVID KINLEY, Ph. D., Urbana, Professor of Economics.

Subject—On Application.

EUGENE DAVENPORT, M. Agr., Urbana, Professor of Animal Husbandry.

Subjects—The Work of the College of Agriculture.

The Principles of Training and Driving Horses.

CHARLES W. TOOKE, A. M., Urbana, Professor of Public Law and Administration.

Subjects—Taxation and the Farmer. (A discussion of the relation of the general property tax to the prosperity of the farmer, showing the experience of Illinois and other states.)
The New Revenue Law. (Its operation and suggestions for amendment.)

HARRY S. GRINDLEY, Sc. D., Urbana, Associate Professor of Chemistry.

Subjects—The Cost, Composition and Nutritive Value of Foods.
The Chemistry of the Cooking of Foods for Man.
The Adulteration of Foods.

JOSEPH C. BLAIR, Ph. D., Urbana, Assistant Professor of Horticulture.

Subjects—Live Problems in Orchardng.
Planting of Home and School Grounds. (Illustrated.)
Horticulture for the General Farmer.
Some Lines of Nature Study,

WILBER J. FRASER, B. S., Urbana, Instructor in Dairy Husbandry.

Subjects—Difference in Efficiency of Individual Dairy Cows.
The Value of the Silo to the Dairyman.
Variation in Milk.

WILLIAM J. KENNEDY, B. Agr., Urbana, Instructor in Animal Husbandry.

Subjects—Swine Feeding.
Balanced Rations for Dairy Cows.
Sheep on the Farm and the Growing and Feeding of Rape.
Animal Types. (15 to 20 minutes.)

JOHN W. LLOYD, B. S. A., Urbana, Instructor in Horticulture.

Subjects—Spraying.
Vegetable Gardening.
Small Fruit Culture.

HUGH E. WARD, M. S., Urbana, Instructor in Soil Physics.

Subjects—Use and Abuse of Cover Crops.
Soil Moisture, its Conservation.
Soil Nitrogen, Sources and Waste.

OSCAR ERF, B. S., Urbana, Instructor in Dairy Husbandry.

Subjects—The Care and Handling of Milk for City Trade.
The Care of Milk on the Farm.

ARCHIBALD D. SHAMEL, B. S., Urbana, Assistant in Farm Crops.

Subjects—Corn Cultivation.
Corn Breeding.
Treatment of Oats and Wheat for Smut.
Forage Crops.
Importance of Pure Seed and How to Secure It. (30 minutes.)

FRED R. CRANE, B. S., Urbana, Assistant in Farm Mechanics.

Subjects—Location and Construction of Drains.
Construction, Cost and Filling of the Silo.
Selection and Care of Farm Machinery.
Sanitary Drainage for Farm Buildings.

CYRIL G. HOPKINS, Ph. D., Champaign, Chemist.

Subject—On Application.

GEORGE P. CLINTON, M. S., Urbana, Assistant Botanist.

Subject—On Application.

LIST OF SPEAKERS WHO ASK PAY FOR THEIR SERVICES ASIDE FROM THEIR
HOTEL AND RAILROAD EXPENSES.

DANIEL BERRY, Carmi, White County.

Subjects—Clover, the Poor Man's Fertilizer.
Economical Feeding of Stock.
Insects Injurious and Insects of Benefit.

Terms, \$10 and expenses.

COL. J. F. BERRY, Union Stock Yards, Chicago, Ill.

Subject—Horses.

Terms, \$10 and expenses. (30 minutes to one hour.)

MISS LINE BRENNEMAN, Minier, Tazewell County.

Subjects—The Farm Home and What It Should Be.
Higher Education for Women as Regards Better Housekeeping
and Home Making.
Flowers and Fruit Culture on the Farm.
Farmers' Wives and Daughters.
The Little Things of Life.

Terms, \$5 and expenses. (30 to 40 minutes.)

E. W. BURROUGHS, Director 18th District, Edwardsville, Madison County.

Subject—Growing and Marketing of Potatoes.

Terms, \$5 per institute and expenses. (25 minutes.)

L. N. CALLAWAY, Bethel, Morgan County.

Subjects—Propagation of Strawberries, Raspberries, Blackberries, Currants, Cherries, Peaches, Plums, Pears, Apples; Transplanting and Culture.

Terms, \$2 per day and expenses.

MRS. ROSE S. CARR, Lis, Jasper County.

Subjects—Poultry Raising.
Domestic Science.

Terms, \$5 and expenses. (10 to 15 minutes.)

JOSEPH CARTER, Champaign, Champaign County.

Subjects—Clover.
Keeping up the Fertility of the Soil.
The Best Product of the Farm is the Farmer.
How to Keep the Old Man on the Farm.
Successful Horse Raising.

Terms, \$10 and expenses. (15 to 60 minutes.)

HENRY DIERS, Sibley, Ford County.

Subject—Farm Drainage.

Terms, \$3.00 and expenses. (15 to 20 minutes.)

BERRY FORD, Carlyle, Clinton County.

Subject—The Care or Growing of a Peach and Apple Orchard.

Terms, \$2.00 and expenses. (15 to 20 minutes.)

PROF. G. H. FRENCH, Carbondale, Jackson County.

Subjects—Insects Injurious to Fruits.
Insects Injurious to Corn or Wheat or Other Crops.

Terms, \$5.00 and expenses. 30 to 60 minutes.

E. S. FURSMAN, El Paso, Woodford County.

Subjects—Corn Culture (Illustrated).

Corn and the Value of Its Commercial Products.
Farm Homes.

Terms, \$5.00 per day and expenses.

A. P. GROUT, Director Sixteenth District, Winchester, Scott County.

Subjects—The Farm the Opportunity for the Young Man of Today.

Type and Quality in Farm Stock (Illustrated.)

Terms, \$10.00 and expenses per institute.

FRED GRUNDY, Morrisonville, Christian County.

Subjects—Making Poultry Profitable.

Growing Forest Trees on the Farm.

Terms \$5.00 and expenses. (15 to 20 minutes.)

JOHN C. HALL, McLeansboro, Hamilton County.

Subject—The Need of Co-operation Among Farmers.

Terms, \$5.00 and expenses. (30 minutes.)

J. L. HARTWELL, Dixon, Lee County.

Subjects—Any Plan of Horticulture.

Small Fruit on the Farm.

Spraying.

Rural Schools; What Should They Teach?

Soil Fertility; How to Hold.

Terms, \$5.00 and expenses. (20 to 30 minutes.)

F. M. HIGGINS, Ottawa, LaSalle County.

Subjects—Education on the Farm.

Agricultural Education.

Effect of Rural Influences on Moral Character.

Terms, \$5.00 an Institute and expenses.

JOHN O. HONNOLD, Warrenton, Edgar County.

Subjects—Rearing and Feeding Beef Cattle for Profit.

Our Agricultural College and Education for Farmers' Sons and Daughters.

Terms, \$3.00 and expenses. (20 minutes.)

W. R. HOSTETTER, Mt. Carroll, Carroll County.

Subjects—Dairying.

Butter Making. Using samples to illustrate talk.

Terms made known on application. (20 minutes.)

JOHN G. IMBODEN, Decatur, Macon County.

Subjects—Feeding and Grazing Cattle for Profit.

Breeding, Growing and Feeding of the Beef Steer.

Terms, \$10 00 and expenses. (30 minutes and upward.)

MRS. NELLIE KEDZIE, Peoria, Peoria County. Bradley Institute.

Subjects—Teaching Domestic Science.

Hygienic Surroundings for the Farm Home.

Terms, \$10.00 and expenses. (30 to 40 minutes.)

O. J. KERN, Rockford, Winnebago County.

Subjects—Evolution of the Country School.

Consolidation of Country Schools as a Means of Economy and Better Schooling.

Terms, \$10.00 and expenses.

JULIA C. LATHROP, 335 S. Halsted street, Chicago.

Subjects—The Care of the Poor.
The Prisoner and the Pauper.
Public Charities, Their Scope and Tendencies.
The Civil Service and the Care of the Poor.

Terms, \$10.00 and expenses. (20 to 30 minutes.)

MRS. E. T. McCARTY, Tuscola, Douglas County.

Subjects—Woman's Sphere from a Woman's Standpoint.
How to Make Home More Attractive.
Physiology of the Kitchen.

Terms, \$5.00 and expenses. (20 minutes.)

C. C. McCUTCHEN, Norris, Fulton County.

Subject—Management of the Corn Fodder Crop.

Terms, \$2.00 per day and expenses.

MRS. FLO JAMESON MILLER, Monticello, Piatt County.

Subjects—Women and Economics.
Out Door Relief.
Organized Charities.
Womans' Clubs.

Terms, \$10 and expenses. (15 to 30 minutes.)

J. ED. MILLER, Monmouth, Warren County.

Subjects—"Horse Sense" in Road Building, *i. e.*—the Good Road that is to be.
Practical Farm Drainage.

Terms, \$5.00 per day and expenses. (10 to 20 minutes.)

ROBERT C. MORRIS, Olney, Richland County.

Subjects—What Clovers, Cow Peas and Soy Beans will do for a Worn out Farm and Discouraged Farmer.
Better Combinations of Forage Crops on the Farm and better Methods of Feeding.
Conservation of Moisture.

JOHN F. NIXON, Marissa, St. Clair County.

Subjects—Crop Rotation.
Sorghum Culture and Syrup Making. (Use charts to illustrate.)

Terms, \$10 and expenses.

F. C. PAIGE, Tamaroa, Perry County.

Subjects—Berry Growing.
Fruit Production for Home Use.
How to Provide an Abundance of Fruit for the Family Cheaply.

Terms, \$2 per day and expenses.

S. A. RIGG, Palmyra, Macoupin County.

Subjects—In High Feather. (Deals with fancy poultry and the relative merits of different breeds.)
Poultry on the Farm. Does it Pay?
Time, Money and Brains—How to use them in the Poultry Yard.

Terms, \$5 and expenses. (30 to 40 minutes.)

H. B. RICE, Lewistown, Fulton County.

Subjects—Soil Management in General or Divided into Tillage, Rotation of Crops and Handling of Farm Manures.
The Farmers' Orchard and Garden.
Feeding and Care of Dairy Herd.

Terms, \$5 per day and expenses.

MISS FRANCES M. SPAITS, Manito, Mason County.

Subjects—Iron Sharpening Iron.
Through the Boy's Window.
Terms, \$5 and expenses.

L. S. SPENCER, Tolono, Champaign County.

Subjects—Potato Culture.
The Farmer's Small Fruit Garden.
The Farmer's Kitchen Garden.
Waste Places on the Farm.
Terms, \$2 per day and expenses. (30 minutes.)

L. A. SPIES, St. Jacob, Madison County.

Subjects—Silo and Ensilage.
Succession of Green Crops for Summer Feeding, Substitute
for Pasture.
Baby Beef.
Breeding and Feeding Hogs.
Terms, \$2 and expenses. (20 to 25 minutes.)

THOMAS J. STANLEY, Fairfield, Wayne County.

Subjects—Practical Horticulture.
Technical Agriculture.
Terms, \$25 and expenses. (30 minutes.)

EMMA R. STRAWN, Lacon, Marshall County.

Subjects—Some Points of Law that a Woman Should Know.
The Public School.
Good Roads.
Terms, \$5 and expenses. (30 minutes.)

A. L. TURNER, Wenona, Marshall County.

Subjects—Farm Mutual Insurance.
Breeding, Training, Feeding and Marketing Draft Horses.
Corn Culture, Exhibiting for Premiums and Best Time to
Market the Crop.
Terms, \$5 and expenses. (15 to 20 minutes.)

DR. W. F. WESSE, Ottawa, LaSalle County.

Subjects—Our Agricultural Department.
Bovine Tuberculosis.
Milk as a Factor in the Production of Disease.
Terms, \$5 and expenses.

F. A. WILLIAMS, Tamaroa, Perry County.

Subjects—How to Select, Breed and Care for a Flock of Sheep.
Some Reasons Why We Should Protect our Song Birds.
Terms, \$2 per day and expenses. (20 minutes.)

GEORGE W. WITT, Kane, Greene County.

Subjects—Cattle Feeding.
Corn Culture.
Wheat Culture.
Terms, \$3 per day and expenses.

REPORT OF COMMITTEE ON DOMESTIC SCIENCE ASSOCIATION.

June 28, 1900.

To the Board of Directors of the Illinois Farmers' Institute:

Gentlemen:—Your Committee on Domestic Science Association beg leave to report that the committee held a meeting at Champaign, May 15, 1900, and had a conference with the officers of the Illinois Association of Domestic

Science. We regard the local and county associations of domestic science which are being organized under the direction of the State association, as being of great help to the mothers and home-makers in the community where the clubs are organized, and also that they help to create a greater interest in and a larger attendance at the county institute meetings.

We recommend that the Illinois Farmers' Institute continue to sustain and strengthen the bonds of affiliation with the Domestic Science Association by giving it a liberal representation on the program at the State meeting, and we further recommend that \$300, or as much thereof as may be needed, be appropriated for the use of the Illinois Association of Domestic Science.

Respectfully submitted,

MRS. SARA STEENBERG,
OLIVER WILSON,
G. W. DEAN,
D. H. HUGHES,
G. A. WILLMARTH,

Committee.

REPORT OF COMMITTEE ON SPECIAL FEATURES FOR IMPROVING COUNTY INSTITUTES.

To the Board of Directors of the Illinois Farmers' Institute:

Gentlemen:—We, your Committee on Special Features for Improving County Institutes, beg leave to make the following recommendations, the adoption of which we believe will increase the usefulness of the Farmers' Institutes:

1st. We recommend, as a means of improving the programs, that the program should be at all times under the control of the institute program committee, and that entertainments foreign to institute lines, consisting of brass bands, comic songs, recitations, school contests and theatricals, etc., be discouraged.

2d. We recommend that the offer of the State Institute to print 1,000 program for each institute be continued, and that the officers of county institutes be urged to accept this offer.

3d. We recommend that at least one session of each institute be conducted by the farmers' sons and daughters and that the program of this session be made up of topics of special interest to them.

That the students who hold scholarships in the College of Agriculture and Domestic Science, be invited by the counties represented by these scholarships to take part on the program, to discuss the questions pertaining to their college work.

4th. We suggest that no speakers' names be placed upon a program without first obtaining their consent to be present to perform the part assigned to them.

5th. We recommend that exhibits at county institutes be discouraged unless the exhibits can be placed in the building where the regular institute exercises are held, and the exhibition rooms be closed during the regular program. We also recommend that no part of the State appropriations be used for paying premiums on exhibits.

6th. We recommend that a system of class instruction, where competent parties can be secured to conduct the same, be introduced during the hours of intermission for the benefit of those who may be interested in special subjects and desire more detailed information than can be given in a discussion of the subject at a general session.

Respectfully submitted,

AMOS F. MOORE,
C. D. BARTLETT,
G. A. WILLMARTH,

Committee.

REPORT OF COMMITTEE ON AGRICULTURAL EDUCATION AND LIBRARY.

SPRINGFIELD, ILL., June 28, 1900.

To the Board of Directors of the Illinois Farmers' Institute:

Gentlemen:—Your Committee on Agricultural Education and Libraries would respectfully report that, in their opinion, the excellent reports heretofore made to the Board by the secretary, in regard to work of the traveling libraries, contain all the details necessary to assure the Board that the money appropriated for that purpose has been well expended. The twenty-one cases of books are doing a most useful work, and the large number of applications for libraries now on file which can not be met, indicates that this work of the Board can and ought to be greatly extended.

The committee heartily commends the diligence and efficiency of the secretary in this direction.

We recommend that the largest possible appropriation be made for this line of work next year. Not less than one thousand dollars should be so used, if available. If this can be done, it is believed that our libraries can in time supply the needs of the State in this direction, and make such legislation as was urged upon the last, and will be urged upon the next General Assembly, quite unnecessary.

In regard to scholarships in the Agricultural College of the University of Illinois, the committee reports that ninety-two scholarships were issued last year, and it is confidently expected that every county in the State will be represented next year. Of the value of the efforts in this direction to the agricultural interests of Illinois, there can be no question.

Respectfully submitted,

ALFRED BAYLISS,
EUGENE DAVENPORT,
JAMES FRAKE,
G. A. WILLMARTH,

Committee.

REPORT OF THE EXECUTIVE COMMITTEE.

SPRINGFIELD, ILL., June 28, 1900.

To the Board of Directors of the Illinois Farmer's Institute:

ESTEEMED FRIENDS:—The actions of the executive committee have been set forth so fully in the minutes of the meetings of the committee that but little remains to report.

It affords us great satisfaction to be able to report that the efforts of the Illinois Farmer's Institute to secure students for the College of Agriculture have been received with the highest appreciation by the university authorities and that the recipients of the scholarships have made excellent use of the opportunities offered by the university.

The number of students receiving scholarships who took up the work at the college was as large as could be expected under the existing conditions of the appointments and the College of Agriculture.

With the experience of the past year to guide us it is expected that better results will be obtained the coming year.

We recommend that each director renew his efforts to recommend one worthy young man or woman from each county in his district for a scholarship in the college of agriculture of the University of Illinois for the ensuing two years, and that the board make provision for the payment of the necessary expenses of the director in performing this work.

Your committee suggests the following form of application for scholarship to the director, which if approved by the board should be printed and sent to each director to assist him in selecting the candidate to recommend.

Form of application for scholarship in the College of Agriculture:

Mr., *Director of the* *District.*

DEAR SIR:—I hereby make application for a scholarship in the College of Agriculture of the University of Illinois.

My home is in County, Ill. My post office is My age I have attended school at I have studied the following branches:, ..., ...

If a graduate of any school, give name of school or college.....

It is my intention if I am awarded a scholarship to begin the course at the University of Illinois at the opening of the term.

State whether you expect to take two years [or a shorter course in agriculture]

State whether you were raised on a farm, or ever worked on a farm, and what line of agriculture you were engaged in.

I refer you to Mr. and Mr., of

Remarks:
.....
.....

Recommended by

Director of district.

Your committee begs leave to report that the copy for the 5th annual institute report is completed and now in the hands of the State Printer; that there was sufficient material to make a volume as large as the board of contracts would permit. We recommend that the forthcoming volume of the report be embellished with not to exceed ten full page illustrations showing the present development along agricultural, horticulture and live stock lines in Illinois, the same to be printed on good paper and be bound in the report.

At the last meeting of the Board of Directors a resolution was adopted which provided for eliminating part of the proceedings of the Board and the Executive Committee from the annual report. Your committee in attempting under this resolution to decide what should, and what should not appear in the report, found that it would so mutilate the minutes as to destroy their value as records. The question was therefore referred to the Attorney General who gave us the following opinion:

SPRINGFIELD, ILL., February 28, 1900.

Illinois Farmers' Institute.

GENTLEMEN:—In reply to your verbal inquiry of this date through your Executive Committee, I have the honor to say that I have examined a pencil copy of a preamble and resolution recently adopted by the Board of Directors of your institute which resolves that "hereafter only the results of our meetings and actions and the reports of our officers and committees be published in our annual reports, to the end that we may present a really valuable volume to the People of the State and of especial value to all interested in agriculture," and am of the opinion that that resolution is not in harmony with section 4 of the act under which your Board is organized. That act provides that the Illinois Farmers' Institute shall make annual report to the Governor of its transactions, "which report shall include papers pertaining to the work, and addresses made at the annual meeting of the organization and a classified statement of all money received and of all expenditures made" and the resolution is in conflict with that provision of the statute, in this, that it seeks to limit such report to the result of the meetings and actions of such board, or of the Illinois Farmers' Institute for which the Board is acting, and to the reports of its officers and committees and thereby eliminates or seeks to

eliminate from the report the addresses made at the annual meeting of the organization, and the transactions of the Institute, both of which are required to be published in the report. That, I think, cannot be done. The statute must govern and the resolution so far as it is in conflict with the statute, is of no avail.

I remain very respectfully,

E. C. AKIN,
Attorney General.

Acting in accordance with this opinion of the Attorney General your committee instructed the Secretary to include in the annual report the full minutes of all proceedings as read to and approved by the Board from time to time.

In having the officers of county farmers' institutes to make report of their meetings and to file receipted vouchers for the expenses of same much delay is caused in the settlement of these claims by the neglect or inability of the county institute officers to furnish the proper papers. We therefore recommend that the Secretary be instructed to prepare a form of report and blank receipts and duplicates to be furnished to the several county institutes to better enable them to make their reports in proper form, said forms and blanks to be approved by the Executive Committee. Since the last meeting of the Board of Directors the annual meeting of the National Association of Institute Workers was held at Delavan, Wisconsin, and your chairman attended as President of the Illinois Farmers' Institute. This action was approved by the Executive Committee and the Secretary was instructed to take a membership in the said National Association of Institute Workers for the Illinois Farmers' Institute, and to forward the membership fee of five dollars to the secretary of said organization. We recommend that our Superintendent be instructed to keep in touch with the National Association of Institute Workers and that your chairman who is a member of the Committee of the National Association to select the place of holding its next annual meeting be instructed to extend to the National Association of Institute Workers an invitation from the Illinois Farmers' Institute to hold its next annual meeting in Illinois at the same place where the State Institute meeting is held and immediately after the program of the State meeting, February 22d, 1901.

Respectfully submitted,

G. A. WILLMARTH,
L. N. BEAL,
D. H. SHANK,
W. R. KIMZEY,

Committee.

REPORT OF SUPERINTENDENT OF INSTITUTES.

SPRINGFIELD, ILL., June 28, 1900.

To the Board of Directors of the Illinois Farmers' Institute.

Mr. President and Gentlemen:—The work of your board is so thoroughly outlined and covered by the reports and recommendations of the several standing committees that there is but little for me, as superintendent, to report or recommend.

During the fiscal institute year ending July 1, 1900, 101 counties of the State, all except Cook county, held Farmers' Institutes. All of these except Whiteside county, have reported and the bills for the expenses of same have been allowed and paid. Some of the counties held two or more institutes during the year, making a total of 109 institutes.

The 100 counties reported drew from the State fund for institute purposes \$7,299.42, and 80 counties drew from the institute fund for the payment of speakers at county and district meetings \$1,991.02, making a total paid for institute expenses by the State of \$9,290.44, or an average of \$92.90 per

county. The total average cost of institutes for each county, including the amount raised by the county, was \$101.70, which shows that only \$8.80 on the average was contributed by the county or locality where the institute was held, for institute purposes.

It appears to me that to remove the financial support of the county institute entirely from the county would be to remove one of the strongest elements of its success, and would tend to place the institute in the attitude of an outside or State institution, instead of a home affair dependent largely on home talent, energy, enthusiasm and money.

A careful examination of the programs and reports of the several county institutes reveals the fact that the value of an institute does not depend entirely on its cost and that there is much room for improvement in the expenditure of the institute funds. There is no question but that the State funds are more judiciously expended when supplemented by and paid out with the local contributions to the county institute. There seems to be a disposition in some localities to divert the institute meetings from direct institute lines and to make them rather a means of drawing trade to the town where the institute is held than to promote the development of agriculture and the home.

I believe that a closer supervision of the county institutes by the directors of the districts would help to overcome these tendencies and lead to a more judicious expenditure of the institute funds and a corresponding increase in the value of the institutes throughout the State.

I would respectfully recommend that some action be taken by the board of directors making it the duty of the director to attend each county institute in his district that he may supervise and audit the bills for the expenses of the same.

I would further recommend in this connection that the director of each district endeavor to have experiment stations established in each county for the purpose of ascertaining the composition of the soils and testing the varieties of grains, grasses and fruits adapted to each locality; that these be under the direction of the County Farmers' Institute officers, or parties appointed by them, cooperating with the State Experiment Station and the students in the College of Agriculture, and that the director be required to learn as far as possible what practical application is made in each county of the lessons taught at farmers' institutes and at the experiment stations and make report of same at the annual meeting of the State institute.

I also recommend that a bulletin be issued at an early date giving a list of the speakers recommended for county institutes, the time and place of holding the State institute; the time and place of holding the district and county institutes; information in regard to the scholarships in the College of Agriculture; a notice of the Farmers' Institute Free Libraries, and how to secure the use of same; suggestions on the arrangement of programs for county institutes and a proposition to print 1,000 programs by the State institute for each county institute; that one or more pages of the bulletin be given to the Illinois Association of Domestic Science if they wish it, to present the objects and purposes of that association, and that copies of these bulletins be sent to all institute officers and the agricultural press of the State.

In regard to the forthcoming annual report I can say that the copy is in the hands of the State printer and that we have assurances that work will begin on it at an early date and the same be pushed to completion.

Respectfully submitted,

A. B. HOSTETTER,
Superintendent.

The special committee to draft resolutions in memory of Charles H. Dolton made the following report:

WHEREAS, Charles H. Dolton, director from the First Congressional District, has been removed by death since the last meeting of the Illinois Farmers' Institute; and

WHEREAS, We are mindful of his long and efficient service to the agricultural interests of Illinois, of his sterling honesty and helpful personal qualities; and

WHEREAS, We remember with appreciation his constant readiness to do, at any personal sacrifice, that which he believed to be right; therefore, be it

Resolved, That in the death of Charles H. Dolton, the Institute has lost one of its most earnest friends, and the agricultural interests of the State one of its earliest and strongest champions; and be it further

Resolved, That these resolutions be inscribed in the records of the Institute and that an engrossed copy be sent to his family.

JAMES FRAKE,
A. P. GROUT,
C. D. BARTLETT,

Committee.

The resolutions were unanimously adopted by a rising vote.

Professor Davenport moved that in case the city selected for the place of holding the State Institute meeting should fail to comply with the requirements of the State Meeting Committee, that the Executive Committee should select a location from the applications now on file with the secretary.

Motion adopted.

Director Goodwin offered the following resolution:

Resolved, That the Legislative Committee be directed to ask the legislature for the modification of an act making appropriation for the Illinois Farmers' Institute and county farmers' institutes, so that the appropriation of \$8,000 shall be in lump sum.

Resolution adopted.

Director Coolidge moved that the recommendations of the Committee on Special Features for Improving County Institutes be published in the Bulletin.

Motion adopted.

A communication from Hughes Bros., Clinton, Ill., and bill for printing done in 1897, referred to the Board by the Executive Committee, were read by the secretary.

Director Frake moved that the secretary be instructed that inasmuch as the Attorney General had given an opinion as to the illegality of the payment the bill could not be allowed, and the parties be so notified.

Motion adopted.

Director Goodwin moved the adoption of the following resolution:

Resolved, That the president is herewith directed to call a meeting of the directors of the Illinois Farmers' Institute, to be held at Urbana, Ill., on the day of the dedication of the new building of the College of Agriculture of the

University of Illinois, a meeting to be held in Springfield during the week of the State Fair, and a meeting during the session of the Illinois Live Stock Breeders' Association, in Springfield.

Resolution adopted.

Director Grout moved that the secretary be instructed to secure an account book and keep an account therein with each fund of the Institute, and that he notify the treasurer of warrants drawn at the time of issue of same.

Motion adopted.

Director Kimzey moved that the secretary be instructed to send a formal invitation to the National Association of Institute Workers to hold their next annual meeting in Illinois in connection with the Illinois State Institute.

Motion adopted.

Director Grout moved that a page be set aside in the forth-coming annual report to the memory of the deceased members of the Board of Directors.

Motion adopted.

Director Davenport moved the following schedule of appropriations for the fiscal year beginning July 1, 1900:

For expressage, postoffice expenses, furniture, etc.....	\$1,300 00
For salary of secretary and superintendent, clerk hire, etc.....	1,700 00
For aid of district institutes.....	800 00
For aid of Illinois Association of Domestic Science.....	300 00
For Institute Free Libraries.....	500 00
For general expenses of Board and directors.....	2,000 00
For contingent fund.....	1,400 00
Total.....	\$8,000 00

On roll call the motion was adopted by the following vote: Ayes, Bartlett, Beal, Burroughs, Davenport, Dean, Easterly, Frake, Goodwin, Grout, Moore, Shank, Willmarth, Wilson, Hughes, Kimzey—total, 15. Nays—none.

On motion a recess was taken till 8 o'clock p. m.

SENATE COMMITTEE ROOM, STATE HOUSE, 8 P. M.

The board met as per adjournment. Roll call showed the same members present as at the afternoon session.

The president announced that the board, as per notice given, would take up the question of a location for the State institute meeting, and that all applicants should first have a hearing.

The following cities through their delegations then presented their claims and proposals for the State meeting:

Champaign, Decatur, Galesburg, Jacksonville, Quincy and Paris. After all the cities had been heard the president announced that the choice would be made by ballot and that he would appoint Directors Burroughs and Kimzey as tellers.

Director Grout moved that the first ballot be an informal one Motion adopted.

The following votes were taken:

	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th
Jacksonville.....	4	5	3	6	5	7	4	7	6	7
Paris.....	5	2	5	2	2	1	2	3	3	2
Galesburg.....	2	3	2	5	4	3	6	3	3	4
Quincy.....	3	2	3	2	4	1	3	1	2	2
Decatur.....	1	2	2				1	2	1	
Champaign.....					2				1	
	15	15	15	15	15	15	15	15	15	15

Jacksonville having secured a majority of all votes cast on the tenth ballot, was declared as the choice for the location of the State institute meeting.

On motion of Director Coolidge, the choice was made unanimous.

On motion of Director Burroughs, the board adjourned.

Read and approved Sept. 26, 1900.

A. B. HOSTETTER,
Secretary.

G. A. WILLMARTH,
President.

INSTITUTE ROOM, STATE HOUSE, June 29, 1900.

The Executive Committee of the Illinois Farmers' Institute met on call of the chairman. Present—Directors Beal, Kimzey, King, Shank and Willmarth.

The following bills were presented and audited:

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the executive committee having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1383	Edw. Hartman Co., printing.....	\$29 05
1384	H. J. Westlake, Pittsfield, delegate 16th district conference.....	3 20
1385	W. B. Conover, Virginia, delegate 16th district conference.....	1 40
1386	C. J. McCallister, White Hall, delegate 16th district conference.....	1 85
1387	Spencer Wycoff, Delhi, delegate 16th district conference.....	3 15
1388	W. L. Frisbie, Rockford, delegate 9th district conference.....	2 16
1389	J. L. Hartwell, Dixon, delegate 9th district conference.....	2 56
1390	Illinois Association Domestic Science, printing, etc.....	103 65
1391	Illinois Association Domestic Science, postage, etc.....	15 00
		\$162 02

Approved June 29, 1900.

G. A. WILLMARTH,
L. N. BEAL,
D. H. SHANK,
WALTER R. KIMZEY.

1392	H. G. Easterly, expenses as director.....	\$50 89
1393	C. D. Bartlett, ...	22 45
1394	W. R. Goodwin	15 05
1395	James Frake, ...	14 30
1396	G. W. Dean, ...	11 26
1397	H. D. Hughes, ...	35 74
1398	Oliver Wilson, ...	19 44
1399	D. H. Shank, ...	14 20
1400	E. W. Burroughs, ...	11 00
1401	J. H. Coolidge, ...	41 44
1402	A. B. Hostetter, salary for June, 1900.....	125 00
1403	A. P. Grout, expenses as director.....	5 00
1404	E. Davenport, ...	9 35
1405	Walter R. Kimzey, ...	16 01
1406	G. A. Willmarth, ...	19 55
1407	L. N. Beal, ...	21 00
1408	Lochman Bros., engraving	50
1409	S. Noble King, expenses as director	5 95
1410	Amos F. Moore, ...	19 90
		\$458 03

Approved June 29, 1900.

G. A. WILLMARTH,
S. NOBLE KING,
WALTER R. KIMZEY,
D. H. SHANK.

Director King moved that the committee on legislation be instructed to ask the Legislature for a special appropriation for the publishing of the Illinois Farmers' Institute annual report. Motion adopted.

Director Kimzey moved that the secretary be instructed to prepare letters for the use of the directors in announcing the awards of the scholarships in the College of Agriculture for press notices, and a personal one to the officers of county institutes, notifying them of the date of the director being in their county, and inviting them to a conference in regard to institute programs, speakers and scholarships.

Motion adopted.

MINUTES OF MEETING OF EXECUTIVE COMMITTEE, June 29, 1900.

Director Beal moved that the Secretary be instructed to have a synopsis of the actions of the Board of Directors and the Executive Committee printed, to send to each Director.

Motion adopted.

Director Shank moved that the \$50 appropriated by the Board of Directors for the aid of the District Institutes be used under the direction of the Director of the district for the purpose of securing speakers and of assisting in making the district meetings of general interest and of the greatest practical benefit.

Motion adopted.

On motion of Director Kimzey the committee adjourned.

Read and approved September 26, 1900.

A. B. HOSTETTER,
Secretary.

G. A. WILLMARTH,
President.

INSTITUTE ROOM, September 26, 1900—1:30 p. m.

The Board of Directors of the Illinois Farmers' Institute met as per call of the President in accordance with the action of the Board.

Roll call showed the following members present, Bartlett, Beal, Burroughs, Coolidge, Davenport, Dean, Esterly, Frake, Goodwin, Hughes, Kimzey, King, Mann, Mills, Moore, Shank, Mrs. Steenberg, Willmarth, Wilson.

Minutes of the meeting of the Board of June 28, 1900, and the minutes of the Executive Committee of June 29th were read and approved.

Director Burroughs, chairman of the Auditing Committee, made the following report:

WINCHESTER, August 15, 1900.

To the President and Board of Directors of the Illinois Farmers' Institute:

GENTLEMEN:—We, your committee, beg leave to report that we have made a careful examination of the books of Secretary A. B. Hostetter and Treasurer A. P. Grout, and from comparison find them to correspond and to be correct.

From the books of the Secretary we find that the following warrants drawn upon the Treasurer have not been presented for payment:

Number.	Amount.
1153.....	\$ 82
1275.....	1 50
1297.....	27
1357.....	1 20
1359.....	67 11
1377.....	48 75
1378.....	1 19
1381.....	17 75
1385.....	1 40
1392.....	50 89
1393.....	22 45
1394.....	15 05
1395.....	14 30
1396.....	11 26
1398.....	19 44
1399.....	14 20
1405.....	16 01
1406.....	19 55
1407.....	21 00
1408.....	50
1409.....	5 95
1410.....	19 90
Total unpaid warrants to date.....	\$370 49
We find in the hands of the Treasurer, deposited in the Bank of Neat, Condit & Grout, the sum of.....	\$8,129 63
Warrants not presented as above up to and including No. 1410.....	370 49
Amount available August 15, 1900.....	\$7,759 14
Said balance remains to the credit of the following funds—	
Office expense, etc.....	\$1,300 00
Salary Secretary, etc.....	1,700 00
Aid of District Institutes.....	800 00
Domestic Science Association.....	300 00
Library.....	500 00
General Fund, Expenses of Directors, etc.....	1,759 14
Contingent Fund.....	1,400 00
Total.....	\$7,759 14

Respectfully submitted,

E. W. BURROUGHS,
G. A. WILLMARTH,
C. D. BARTLETT, *Committee.*

Director Kinzey moved that the report of the auditing committee be accepted and placed on file.

Motion adopted.

Chairman Wilson of the State Institute meeting committee made verbal report that the halls and other arrangements offered by the citizens of Jacksonville were satisfactory, that the committee was corresponding with several parties with the view of securing their services at the State meeting, and asked for further time in which to complete the program. Which request was granted.

Director Mrs. Sara Steenberg asked that an appropriation be made by the board to aid in holding a Farmers' Institute in the Third Congressional District.

Director Kimzey moved that \$50.00 be appropriated to Director Mrs. Sara Steenberg from the contingent fund for the expenses of holding an institute in the Third Congressional district.

The roll call on the adoption of the motion resulted in the following vote: Bartlett, Beal, Burroughs, Coolidge, Davenport, Dean, Easterly, Frake, Goodwin, Hughes, Kimzey, King, Mann, Mills, Moore, Shank, Steenberg, Willmarth, Wilson. Ayes, 19; nays, 0.

Director Wilson moved that the Secretary be instructed to make the same distribution of the institute annual reports as was ordered last year namely, forty copies to each director, thirty copies to each County Institute, and the balance to be distributed through the secretary's office.

Motion adopted.

Mr. C. P. Conger, of Buffalo, N. Y., addressed the board on the objects and purposes of the Pan American Exposition to be held in Buffalo and asked the coöperation of the Illinois Farmers' Institute in making an exhibit of the agricultural products of Illinois at that exposition.

Director Dean moved that a committee be appointed to report on the Pan American Exposition.

Motion adopted.

The president appointed Directors Dean, Goodwin and Mann as such committee.

On motion of Director Dean the board adjourned to 7:30 p. m.

September 26, 1900, 7:30 P. M.

Board met as per adjournment. Roll call showed the following members present: Beal, Coolidge, Davenport, Dean, Easterly, Hughes, King, Moore, Shank, Willmarth, Wilson, Mills, Mann, Steenberg.

Director Davenport offered the following resolution:

WHEREAS, One of the leading functions of the Illinois Farmers' Institute is to be instrumental in securing such legislation as shall be advantageous to the agricultural interests of the State, and

WHEREAS, If this body is to be influential and effective in matters of legislation, such matters must have early and discriminating attention; therefore, be it

Resolved, That the president be instructed to take such measures as may be necessary to secure careful attention to this subject on the part of the proper committee, both immediately and during the process of legislation.

Director Goodwin moved the adoption of the resolution.

Motion carried.

Director Easterly offered and moved the adoption of the following resolution:

WHEREAS, The Coöperative interest of the Illinois Farmers' Institute work and the State University are so inseparably associated, that it is the sense of the Illinois Farmers' Institute that the president of said Institute should be a member of the Board of Trustees of the University of Illinois, therefore, be it

Resolved, That the Illinois Farmers' Institute memorialize the State Legislature to so amend the laws governing the University of Illinois as to make the president of the Illinois Farmer's Institute, *ex-officio*, a member of the Board of Trustees of the University of Illinois.

Resolution adopted.

Director Dean reported for the committee on the Pan-American Exposition as follows:

WHEREAS, An exposition of the civilization of the western continent will be held at Buffalo, N. Y., in 1901, under the name of the Pan-American Exposition, affording unusual opportunities for the demonstration of the agriculture of the United States, therefore be it

Resolved, That the Illinois Farmers' Institute expresses its hearty sympathy with the purposes of that exposition and pledges its support in the effort to have the agriculture of the State of Illinois adequately represented.

[Signed,]

G. W. DEAN,
W. R. GOODWIN,
F. I. MANN,
Committee.

On motion of Director Beal the resolution was adopted.

Director Mills moved that the resolution adopted at the previous meeting of the board asking for the appropriation of \$8,000.00 for the institute in a lump sum, be reconsidered.

Motion to reconsider adopted.

Mr. King moved to lay the original motion on the table.

Motion to table carried.

Director Coolidge moved the adoption of the following resolution:

Resolved, That the Committee on State Institute meeting be instructed to devise some other plan than advertising for locations as heretofore and report such plan to the board at the February meeting.

Resolution adopted.

Director Coolidge offered the following resolution and moved its adoption:

Resolved, That the Illinois Farmers' Institute accept no entertainments or banquets during the State Institute meetings.

Director Mills moved to lay the resolution on the table.

Motion to table carried.

Mr. H. H. Gross, of Chicago, who represents the Department of Agriculture at Washington in exploiting good roads in Illinois, made a short talk on the work he is doing in behalf of good roads and asked for the coöperation of the board in bringing this important question before the county institutes.

The Secretary presented the claim of H. B. Gurler for services as speaker at the State meeting, referred to the board by the Executive Committee.

Director Mann moved that the Secretary be instructed to write to Mr. George H. Gurler, president of the State Dairyman's Association, and explain that the invitation to furnish a speaker was a courtesy to the Dairyman's Association and that the board had not been paying more than the expenses of home speakers at the State meetings.

Motion adopted.

Mr. William L. Amoss, Benson, Md., Director Farmers' Institutes Maryland Agricultural College was present and talked a few minutes to the board on the institute work of his state.

Director Wilson moved that the board take a recess until 8:30 Thursday morning to give the committee on legislation an opportunity to make a report.

Motion adopted.

September 27, 1900.

Board met as per adjournment in Institute room at 8:30 a. m.

Roll call showed the following members present: Beal, Coolidge, Davenport, Dean, Easterly, Hughes, King, Moore, Shank, Willmarth, Wilson.

The Committee on Legislation made the following report:

SPRINGFIELD, September 27, 1900.

To the Board of Directors of the Illinois Farmers' Institute:

Gentlemen:—The Committee on Legislation beg leave to recommend the following:

That the number of reports be increased to 20,000 copies.

That \$75.00 be appropriated for each county institute.

That \$8,000 be appropriated for the use of the Illinois Farmers' Institute, to be itemized as in the enactment of last session.

That an effort be made to secure a time limit in the printing of the annual report.

That a bill be formulated for securing pure seeds in the markets of Illinois.

A bill for re-enactment of the Funk Bill, apportioning the United States funds to the Agricultural College.

That an appropriation of \$1,000 be asked for the free circulating libraries.

That the president of the Illinois Farmers' Institute be made *ex-officio* a member of the Board of Trustees of the University of Illinois.

That \$10,000 be appropriated for soil investigations, to be made in the several sections of the State by the experiment station.

Respectfully submitted,

G. A. WILLMARTH,
J. H. COOLIDGE,
G. W. DEAN,

Committee.

Director King moved that all the recommendations of the committee be adopted except the one referring to soil investigations, which be postponed till the next meeting of the board.

Motion adopted.

Director Shank moved that the Legislative Committee present to the secretary on or before November 1st, a copy of each bill recommended, and that he shall have the same printed and send copies of same to each director.

Motion adopted.

On motion of Director Coolidge the Board adjourned.

Read and approved February 26, 1901.

L. N. BEAL,
Vice-President.

A. B. HOSTETTER,
Secretary.

September 28, 1900.

The Executive Committee met as per call of the chairman. Present: Directors Willmarth, Shank, and S. Noble King.

The following bills were presented, audited, and ordered paid:

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1411	Frank Simmons, for library books.....	\$4 88
1412	Runder Trunk Co., repairs on library cases.....	1 50
1413	J. H. Monrad, 10 volumes A. B. C. Butter Making, etc.....	18 00
1414	W. A. Henry, for 10 volumes Feeds and Feeding.....	12 50
1415	A. B. Hostetter, salary for July and August, 1900.....	250 00
1416	A. B. Hostetter, for postage secretary's office.....	22 00
1417	Western Union Telegraph Co., messages.....	2 66
1418	Central Union Telephone Co., messages.....	1 25
1419	American Express Co.....	2 68
1420	Adams Express Co.....	1 23
1421	United States Express Co.....	3 59
1422	Edw. Hartman Co., postage, \$11.00, printing \$98.85.....	109 85
1423	W. C. Schuppel, engrossing resolutions.....	10 00
1424	Phillips Bros., 41 cuts and blank book.....	89 50
1425	Champaign Gazette Co., printing for Ill. A. D. S.....	3 00
1426	Mae Meyers, typewriting for Ill. A. D. S.....	3 80
1427	Hart G. Betz.....	3 00
1428	Ill. Association Domestic Science, printing and postage, etc.....	20 00
1429	G. W. Dean, expenses as director.....	27 22
1430	E. W. Burroughs, expenses as director.....	50 35
1431	A. B. Hostetter, expenses on committee meetings.....	10 80
1432	Whiteside County Farmers' Institute expenses.....	75 00
1433	.....	10 80

1434	Edw. Hartman Co., for printing.....	\$105 40
1435	Phillips Brothers, for printing 69 cuts.....	34 50
1436	St. Nicholas Hotel, 17th district conference expenses.....	2 50
1437	J. H. Coolidge, expenses as director.....	40 55-
1438	G. A. Willmarth, speaker at Ogle County Institute, expenses.....	6 75
Total.....		\$917 93

Approved September 26, 1900.

G. A. WILLMARTH,
D. H. SHANK,
S. NOBLE KING.

1339	C. D. Bartlett, for expenses as director, board meeting.....	\$15 00
1440	G. A. Willmarth, committee meetings.....	61 66
1441	James Frake, board meeting.....	10 25
1442	H. D. Hughes, ...	23 35
1443	F. I. Mann, ...	6 36
1444	E. Davenport, ...	18 04
1445	E. W. Burroughs, ...	9 25
1446	S. Noble King, ...	10 85
1447	D. H. Shank, ...	14 45
1448	J. H. Coolidge, ...	16 50
1449	Amos F. Moore, ...	17 30
1450	Mrs. Sara Steenberg, ...	19 45
1451	Oliver Wilson, ...	22 18
1452	G. W. Dean, ...	11 42
1453	H. G. Easterly, ...	13 40
1454	L. N. Beal, ...	49 47
1455	L. N. Beal, awarding scholarships.....	15 60
1456	G. A. Willmarth, board meeting.....	18 06
Total.....		\$352 65

Approved September 28, 1900.

G. A. WILLMARTH,
L. N. BEAL,
D. H. SHANK.

There being no further business, the committee adjourned.

Minutes read and approved February 26, 1901.

A. B. HOSTETTER,
Secretary.

L. N. BEAL,
Vice-President.

BELLEVILLE, ILL., December 7, 1900.

The Executive Committee met at above time and place on call of Chairman G. M. Willmarth. President Willmarth being absent, Vice-President L. N. Beal acted as chairman. The following members of the committee answered to roll call: Beal, Kimzey, King and Shank.

The minutes of the meeting of September 28th were read and approved.

The bills and reports of county farmers' institutes were presented by the Secretary for audit. On motion of Director Kimzey the reports of Calhoun, Saline, Union, Pulaski, Williamson and Peoria counties, were referred to the respective directors of the districts to which said counties belong, and if approved by said directors that the Secretary be instructed to draw warrants in payment of their accounts.

Director Kimzey moved that the reports of Brown and Hancock counties be returned to the secretaries of said county farmers' insti-

tutes for an itemized statement of accounts, and that when such reports are approved by the Director warrants be drawn in payment of same.

Motion adopted.

To the Board of Directors of the Illinois Farmers' Institute:

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1457	Woodford County Farmers' Institute, Geo. Shurman, Treasurer	\$75 00
1458	Eleventh Congressional District Institute, ..	18 50
1459	Mason County Farmers' Institute, Lena Peine, ..	75 00
1460	Sangamon County Farmers' Institute, L. H. Colman, ..	75 00
1461	Henderson, .. D. A. Whitman, ..	55 75
1462	Montgomery .. William Beatty, ..	75 00
1463	A. B. Hostetter, salary for Sept. and Oct., 1900	250 00
1464	Madison County Farmers' Institute, Lee S. Dorsey, Treasurer	75 00
1465	Eighteenth Congressional Dist. Institute, ..	50 00
1466	Adams County Farmers' Institute, E. S. Frank, Treasurer	39 97
1467	Canceled	
1468	Peoria County Farmers' Institute, William West, Treasurer	52 52
1469	Hancock .. C. N. Dennis, ..	37 35
1470	Schuyler .. J. W. Whitson, ..	47 85
1471	Clark .. Geo. W. Tobias, ..	75 00
1472	Pulaski .. H. G. Hogendobler, ..	72 70
1473	Williamson .. A. M. Townsend, ..	75 00
1474	Hamilton .. A. J. Yates, ..	75 00
1475	Twentieth Cong. Dist. .. A. J. Yates, ..	50 00
1476	Shelby County Farmers' Institute, W. Middlesworth, ..	34 65
1477	Crawford .. Alex. H. Delzell, ..	52 30
1478	White .. Daniel Berry, ..	75 00
1479	Randolph .. John Craig, ..	75 00
1480	Union .. D. W. Karraker, ..	65 70
1481	Saline .. J. B. Warren, ..	75 00
Total		\$1,651 89
1482	Central Union Telephone Co.	55
1483	American Express Co.	62 18
1484	Adams Express Co.	35 54
1485	United States Express Co.	30 07
1486	Edward Hartman Co., printing and postage	121 05
1487	Coe Brothers, office supplies	4 20
1488	Springfield Gas Co., office supplies	2 00
1489	Postal Telegraph Co.	25
1490	John Underfanger, drayage and freight	4 77
1491	A. B. Hostetter, postage secretary's office	15 00
1492	H. W. Rokker Co., binding cuts in annual reports	100 00
1493	H. A. McKeen, shipping reports	10 00
1494	Illinois Association Domestic Science, Mrs. J. C. Blair, Secretary	13 24
1495	Runder Trunk Co., 10 library cases	27 50
1496	Springfield Trunk Co., library cases and repairs	28 50
1497	Frank Simmons, books for libraries	309 75
1498	Frank Simmons, books for libraries	37 39
1499	A. B. Hostetter, salary for November, 1900	125 00
1500	W. R. Goodwin, expenses as Director, Board Meeting	11 50
1501	E. W. Burroughs, ..	17 30
1502	G. A. Willmarth, ..	63 00
1503	G. W. Dean, ..	21 96
1504	Illinois State Journal Co., old bill of 1899	\$15 25
1505	W. R. Kimzey, expenses as Director	79 58
1506	A. B. Hostetter, expenses attending committee meetings	16 90
1507	L. N. Beal, .. as Director	36 51
1508	S. Noble King, ..	18 85
1509	D. H. Shank, ..	44 20
Total		\$1,155 04

Approved December 7, 1900.

L. N. BEAL,
W. R. KIMZEY,
S. NOBLE KING,
D. H. SHANK,
Committee.

The Secretary reported that the Committee on State Institute program recommended the printing of 8,000 programs for the State meeting of the same form and quality as for the previous meeting.

Director Kimzey moved that the Secretary be instructed to secure bids on printing 5,000 programs of 32 pages each and for each additional one thousand printed.

Motion adopted.

Director Kimzey moved that the committee adjourn to meet in Springfield on January 10, 1901.

Motion adopted.

Read and approved February 26, 1900.

A. B. HOSTETTER,

Secretary.

L. N. BEAL,

Vice-President.

INSTITUTE ROOM, Jan. 10, 1901, 10:30 A. M.

The Executive Committee met as per adjournment. Present on roll call—Directors Beal, Kimzey, King, Shank; absent, Chairman Willmarth. The chairman being absent, Vice-President Beal acted as chairman.

The following report was made on the bills presented for audit:

To the Board of Directors of the Illinois Farmers' Institute.

The undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1510	Wayne County Farmers' Institute,	B. F. Burton, treasurer	\$75 00
1511	Jackson County ..	Edw. Worthen, treasurer	73 21
1512	Morgan County ..	Stonfield Baldwin, ..	75 00
1513	Brown County ..	Robert Bloomfield, ..	75 00
1514	Edwards County ..	Ansel Gould Bloomfield, treasurer	75 00
1515	Jefferson County ..	John T. Beal, treasurer	75 00
			\$448 21
1516	Menard County and 17th district institute,	W. E. Johnson, treasurer	78 55
1517	Edgar County Farmers' Institute,	C. D. Smith, treasurer	75 00
1518	Cumberland County ..	H. A. Aldrich, ..	47 73
1519	Jasper County ..	A. A. Nees, ..	75 00
1520	Effingham County ..	L. P. Mauts, ..	75 00
1521	DeWitt County ..	Chas. Walker, ..	75 00
1522	Richland County and 19th district institute,	F. Britton, treasurer	109 56

1523	DeKalb County Farmers' Institute, B. F. Wyman, ..	75 00
1524	Lawrence County Willard D. Barr, ..	61 15
1525	Clinton County Joseph Heinman, ..	41 73
1526	Coles County Hardy F. Hill, ..	75 00
1527	Scott County Richard Coulter, ..	62 40
1528	Franklin County E. Dillen, ..	75 00
1529	Platt and 13th district Institute, Winn Royer, treasurer	124 97
1530	McDonough County Farmers' Institute, S. A. Merriam, treasurer	46 45
1531	Whiteside County S. R. Hall, ..	75 00
1532	Hardin County Edw. Schneider, ..	74 75
1533	Wabash County L. W. Jaquess, ..	41 54
1534	Moultrie County Geo. Righter, ..	26 98
1535	Clay County C. S. Hays, ..	37 10
1536	Pope County H. W. Wellman, ..	33 45
1537	Stark County W. R. Sandham, ..	58 90
1538	Johnson County R. W. Alsbrook, ..	75 00
1539	Henry County Geo. W. Ferguson, ..	75 00
1540	Marion County T. S. Marshall, ..	75 00
1541	Monroe County W. J. Harms, ..	58 69
1542	Perry County W. T. White, ..	61 38
1543	St. Clair County E. S. Helms, ..	72 19
1544	Washington County and 21st district Institute, John Meyers, treasurer	125 00
		\$1,989 52

Approved January 10, 1901.

L. N. BEAL,
W. R. KIMZEY,
S. NOBLE KING,
D. H. SHANK,

1545	American Express Co., expressage	\$13 98
1546	Myron B. Williams, for Illinois Association Dom. Science	2 50
1547	Mrs. J. C. Blair, ..	92
1548	Edw. F. Hartman Co., printing	25 75
1549	Adams Express Co., expressage	8 60
1550	United States Express Co., expressage	18 90
1551	Frank Simmons, library books	52 57
1552	A. B. Hostetter, postage for secretary's office	10 27
1553	S. Noble King, expenses as director	12 83
1554	G. A. Willmarth, ..	35 00
1555	H. G. Easterly, ..	54 85
1556	E. W. Burroughs, ..	25 60
1557	A. B. Hostetter, salary for December, 1900	125 00
1558	W. R. Kimzey, expenses as director	29 75
1559	S. Noble King, ..	15 62
1560	D. H. Shank, ..	20 26
1561	L. N. Beal, ..	16 18
		\$468 56

Approved January 10, 1901.

L. N. BEAL,
W. R. KIMZEY,
S. NOBLE KING,
D. H. SHANK.

Director Kimzey moved that warrant No. 1467 to treasurer of Calhoun county be canceled.

Motion adopted.

Director King moved that the bill of Richland county and the 19th District Institute be allowed for \$109.56, and that the balance be held in abeyance till an itemized statement be furnished of the \$15.00 paid to Dr. Morris, of Olney.

Motion adopted.

Director Kimzey moved that the bill of Alexander County Institute be held for the receipts of expenses paid.

Motion adopted.

On motion of Director Shank the report of Massac County Institute was referred to Director Easterly for correction.

Director Kimzey moved that the bid of Edward F. Hartman Co., being the lowest bid for printing the State meeting programs, that the contract be let to said Edward F. Hartman Co., and that 7,000 copies of the program be ordered.

Motion adopted.

Director Kimzey moved that the Secretary be instructed to rent a typewriter for the balance of this term, if the one now loaned by the State Department is taken from the office.

Motion adopted.

On motion the committee adjourned.

Read and approved Feb. 26, 1901.

L. N. BEAL,
Vice-President.

A. B. HOSTETTER,
Secretary.

JACKSONVILLE, Feb. 19, 1901.

The committee met in the parlor of the Pacific Hotel. Present: Directors Beal, Kimzey, King, Shank. Chairman Willmarth being absent on account of ill health, Vice-President Beal acted as chairman.

The committee remained in session during the State Institute, and the following report was made on the bills presented for audit:

To the Board of Directors of the Illinois Farmers' Institute.

We, the undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the order of the respective claimants for the following amounts:

1588	W. M. Beardshear, expenses as speaker State meeting.....	\$28 00
1589	Cyril G. Hopkins, ...	10 40
1590	Elizabeth O. Hiller, ... I. A. D. S.....	28 70
1591	Isabel Revier, ...	10 00
1592	James M. White, ...	9 18
1593	Mrs. Joseph Carter, ...	10 51
1594	Aaron Jones, ... State meeting.....	29 30
1595	Mrs. T. D. Richardson, printing	5 00
1596	Miss Julia C. Lathrop, expenses	5 00
1597	Prof. J. C. Blair, ...	18 83
1598	Prof. W. J. Kennedy, ...	15 85
1599	H. H. Gross, ...	9 50
1600	The Farm, Jacksonville, printing	6 25
1601	Miss Effie McCool, typewriting	5 25
1602	Mrs. Nellie S. Kedzie, speaker	43 30
1603	Mrs. E. E. Chester, ...	12 45
		\$247 52
1604	Fayette County Farmers' Institute, R. T. Higgins, treasurer.....	\$75 00
1605	Carroll John Simpson, ...	75 00
1606	McHenry F. C. Wells, ...	75 00
1607	Winnebago D. W. Evans, ...	75 00
1608	DuPage County and 8th District Institute, James McKee treasurer.....	125 00
		\$425 00

1609	Mrs. Joseph Carter, expenses Illinois A. D. S.	\$8 50
1610	Mrs. J. C. Blair,	6 18
1611	Coe Brothers, office supplies	4 00
1612	Mrs. J. C. Blair, expenses Illinois A. D. S.	5 92
1613	Adams Express Co., expressage	4 20
1614	American Express Co.,	4 29
1615	United States Express Co., expressage	9 23
1616	Western Union Telegraph Co.	4 25
1617	Edward F. Hartman Co., printing and postage	169 25
1618	John Underfanger, drayage and freight	90
1619	A. B. Hostetter, salary for January, 1901	125 00
1620	J. H. Coolidge, expenses as director	69 90
1621	H. H. Hughes,	43 93
1622	G. W. Dean,	14 01
1623	S. Noble King,	3 30
1624	G. A. Willmarth,	22 60
1625	Mrs. J. C. Blair, Illinois A. D. S.	7 15
1626	A. B. Hostetter, postage secretary's office	22 00
1627	A. B. Hostetter, expenses committee meetings	8 48
1628	Oliver Wilson, expenses as director	11 40
1629	Oliver Wilson,	38 88
1630	Mrs. Sara Steenberg, expenses as director	20 30
Total		\$603 67

On motion of Director Kimzey the committee adjourned to meet in Institute Room, Springfield, Feb. 25, at 1:30 p. m.

Read and approved Feb. 26, 1901.

A. B. HOSTETTER,
Secretary.

L. N. BEAL,
Vice-President,

INSTITUTE ROOM, February 25, 1901.

The Executive Committee met as per adjournment. Present—Directors Beal, Kimzey, King and Shank; President Willmarth being absent on account of sickness. Minutes of the meetings of January 10, 1901, and February 19, 1901, were read and approved.

Director Shank moved that 250 copies of each of three editions of the "Pantagraph" be taken to be sent to the members of the Board of Directors and to the President and Secretary of each County Farmers' Institute, at 3 cents each. The last number to contain a report of the board meeting of the 26th, 1901. Motion adopted.

Director Shank moved that the report of Knox county be referred back to the Secretary and President for the sworn statement. Motion adopted.

Director Beal moved that the Secretary be instructed to write to the past secretaries of the County Farmers' Institutes for copies of papers read at their several institutes, to be submitted for publication in the annual report. Motion adopted.

Director Shank moved that the secretary be instructed, at the request of the chairman of the Committee on State Speakers, to write and ask each director to recommend any new speakers that he may desire on the list, or to name any who should be stricken from the list of last year. Motion adopted.

Director Beal moved that the Secretary request President Willmarth to return the typewriter belonging to the Farmers' Institute to the secretary's office, instead of to the president-elect. Motion adopted.

Director Shank moved that the Secretary be authorized to secure stationery for the members of the board and for the secretary's office. Motion adopted.

Director Beal moved that the secretary be authorized to purchase one dozen filing cases for the secretary's office and to have printed, when the standing committees are appointed, 100 roster cards for each director, 500 for the president and 1,000 for the secretary. Motion adopted.

Director Shank moved that the Secretary extend an invitation to the secretaries of County Farmers' Institutes for the past year to send their pictures to be published in vol. six of the annual report. Motion adopted.

Director Beal moved that the Secretary be instructed to prepare a form of bond for the treasurer-elect and send the same to Treasurer A. P. Grout to be executed. Motion adopted.

February 25-27, 1901.

The committee remained in session, taking a recess from time to time, till February 27, 1901, and audited the following bills and county institute reports, as they were presented:

To the Board of Directors of the Illinois Farmers' Institute:

We, the undersigned members of the Executive Committee, having duly examined the claims of the parties named below, have approved the same and recommend that warrants in payment of said vouchers be drawn to the respective claimants for the following amounts:

1631	Adams Express Co.....	\$6 46
1632	The Smith Premier Typewriter Co., rent of machine.....	6 00
1633	Central Union Telephone Co.....	3 59
1634	C. D. Bartlett, expenses as director.....	60 95
1635	Secretary Illinois A. D. S., Mrs. S. Noble King.....	9 51
1636	S. Noble King, expenses as director.....	13 31
1637	L. N. Beal, expenses as director.....	29 77
1638	Alfred Bayliss, expenses as speaker at State meeting.....	2 25
1639	D. H. Shank, expenses as director, State meeting.....	17 77
1640	H. G. Easterly expenses as director, State meeting.....	29 60
1641	A. B. Hostetter, expenses attending State meeting.....	12 80
1642	J. T. Galbraith.....	12 00
1643	E. W. Burroughs, expenses as director.....	40 82
		\$245 04
1644	H. G. Easterly, expenses as director.....	\$16 20
1645	E. Davenport.....	30 61
1646	Mrs. Sara Steenberg, expenses as director.....	18 50
1647	H. B. Gurler, services as speaker at Mt. Vernon.....	25 00
1648	Ralph Allen, expenses as director.....	4 64
1649	John M. Clark.....	15 50
1650	Amos F. Moore.....	57 55
1651	F. I. Mann.....	22 52
1652	G. W. Dean.....	10 76
1653	James Frake.....	19 95
1654	Mrs. H. M. Dunlap, expenses as speaker at State meeting.....	7 85
1655	John M. Clark, expenses as director.....	19 20
1656	Oliver Wilson.....	31 60
1657	H. M. Dunlap.....	2 50
1658	S. Noble King.....	10 75
1659	Joseph Newman.....	19 70

1660	Mrs. J. C. Blair, Ill. A. D. S.....	\$9 52
1661	George A. Hunt, expenses as director.....	17 55
1662	D. H. Shank, ...	14 85
1663	Amos F. Moore, ...	11 95
1664	L. N. Beal, ...	20 00
1665	W. R. Kimzey, ...	31 47
1666	J. H. Coolidge, ...	36 52
1667	H. M. Dunlap, ...	3 00
1668	P. G. Holden, expenses as speaker at State meeting.....	5 60
1669	A. P. Grout, expenses as director.....	44 00
		\$507 19
1670	Shelby County Farmers' Institute, W. S. Middlesworth, treasurer.....	\$37 60
1671	Wabash County Farmers' Institute, Isaac W. Jacques, treasurer.....	30 45
1672	Pope County Farmers' Institute, H. W. Wellman, treasurer.....	27 47
1673	7th Congressional District Institute, H. B. Pierce, treasurer.....	50 00
1674	Livingston County Farmers' Institute, F. Mortimer, treasurer.....	75 00
1675	Kendall County Farmers' Institute, Alonzo Stansel, treasurer.....	75 00
1676	Vermilion County Farmers' Institute, D. M. Fowler, treasurer.....	74 81
1677	Iroquois Farmers' Institute, H. C. Center, treasurer.....	75 00
1678	Macon County Farmers' Institute, C. H. Scott, treasurer.....	75 00
1679	Calhoun County Farmers' Institute, William Mortland, treasurer.....	35 40
		\$555 73

Approved February 25th, 26th and 27th, 1901.

W. R. KIMZEY,
D. H. SHANK,
L. N. BEAL,
S. NOBLE KING.

On motion of Director Shank, the committee adjourned.

Minutes read and approved, Feb. 26, 1901.

G. A. WILLMARTH,
President.

A. B. HOSTETTER,
Secretary.

Springfield, Feb. 26, 1901.

The board met as per call in accordance with the statutes, at 2:30 p. m. in the Institute Room, State House. Roll call showed the following members present: Bartlett, Beal, Burroughs, Clark, Coolidge, Davenport, Dean, Easterly, Frake, Grout, Hughes, Kimzey, King, Mann, Mills, Moore, Shank, Steenberg and Wilson.

President Willmarth being absent, the meeting was called to order by Vice-President Beal.

The minutes of the board meeting of September 27th to 29th inclusive, were read and approved, also the minutes of the meetings of the executive committee of September 28, December 7, 1900, and January 10 and February 19, 1901, were read and approved.

Treasurer A. P. Grout made the following report:

WINCHESTER, ILL., Feb. 25, 1901.

Statement of receipts and orders paid by A. P. Grout, treasurer of Illinois Farmers' Institute from June 26, 1900, to Feb 25, 1901:

Received.			Paid out.		
1900.			1901.		
June 28.	To balance on hand...	\$594 69	Feb. 25.	By orders paid and returned herewith as per statement attached.....	\$9,401 20
July 25.	State Treasurer.....	8,000 00		Balance on hand.....	3,973 90
Sept. 19.	"	75 00			
Nov. 10.	"	280 35			
1901.					
Jan. 11.	"	1,376 55			
Feb. 19.	"	3,048 51			
Total		\$13,375 10	Total		\$13,375 10

The above statement made by me as treasurer is respectfully submitted.

A. P. GROUT,
Treasurer.

On motion of Director Mills the report of Treasurer Grout was accepted and referred to the auditing committee.

The Secretary made the following report:

INSTITUTE ROOM, STATE HOUSE, Feb. 26, 1901.

To the Board of Directors of the Illinois Farmer's Institute.

ESTEEMED FRIENDS:—The report of the superintendent made at the annual meeting at Jacksonville covered the general work of the Institute year, there remains, therefore, to report only the business of the secretary's office.

The awarding of the scholarships and the equipping and care of the libraries has increased the correspondence and work of the office almost double. One hundred and six scholarships have been awarded during the year and all of the appointees have reported as being at the College of Agriculture.

During the present year twenty new libraries have been equipped, making a total of forty-one libraries, all of which are now in use.

Ninety-two counties have made formal reports of institutes held.

Bureau, Champaign, Calhoun, Kane, McLean, Tazwell and Warren counties have held institutes and have not yet reported.

Cook, LaSalle and Gallatin counties have not as yet held an institute.

There has been paid out for expressage, postage, printing and office supplies, \$1,094.70, leaving a balance to the credit of fund No. 1 of \$205.30. Paid for salaries and clerk etc., \$885.00 leaving to the credit of fund No. 2 \$815.00. Paid for congressional district institutes \$441.62 leaving to the credit of fund No. 3 \$358.38 with the 14th and 15th districts yet to hear from. Paid out for the Illinois Association Domestic Science \$152.41 leaving to the credit of fund No. 4 \$157.59.

Paid out for libraries, books and cases \$487.59 leaving to the credit of library fund No. 5 \$12.41. Paid out for general expenses of the Board \$1,635.73 leaving to the credit of fund No. 6 \$103.41.

Balance to the credit of contingent fund \$1,400.00.

Total amount on hand not drawn upon \$3,052.09.

Respectfully submitted,

A. B. HOSTETTER,
Secretary.

On motion of Director Wilson, the Secretary's report was accepted and referred to the auditing committee.

Director Wilson, chairman of the Committee on State Institute Meeting reported as follows:

To the Board of Directors of the Illinois Farmers' Institute:

GENTLEMEN:—Your committee on State Institute Meeting submits the following report: The committee held two meetings and outlined a program and instructed the chairman to carry out the general outline but granting the right to make such changes from time to time as should become necessary. After a vast amount of correspondence the program was fully completed and the number authorized by the board printed and distributed.

It is not necessary to give the program here as it will be published as finally carried out in the annual report.

The committee believes after talking with many who were in attendance at the State Institute that the class exercises were a decided success and should be continued.

Your committee recommend that the manner of locating the State Meeting be changed so that instead of inviting bids from the various cities as heretofore the State Institute Committee should select two or more favorable locations and report its finding to the full board. Then the meeting shall be located at one of these places by vote of the board. We recommend further that the Illinois Farmers' Institute assume all financial responsibilities and arrange for hall and hotel accommodations.

Respectfully submitted,

OLIVER WILSON,
Chairman Com.

Director Mills moved that the question of adopting the report be divided and a vote taken first on the acceptance of the report and then taken on the adoption of the recommendations of the committee.

Motion to divide the question adopted.

¶ A vote was taken on accepting the report, and the report was accepted.

Director Mann moved that the recommendations be laid on the table.

[Motion to table adopted.

Director A. P. Grout, chairman Committee on Legislation, made verbal report that bills had been presented to and introduced both in the House and Senate asking for the usual appropriation for the support of the State and County Farmers' Institutes, namely: \$75 for each county institute and \$8,000 per annum for the State Institute with an addition of \$2,500 for the maintenance and extension of the institute free libraries.

Also a bill providing for increasing the number of volumes published of institute annual report to 20,000 copies per annum.

Director Mrs. Sara Steenberg, chairman of Committee on Domestic Science Association Work, presented the following resolutions which were unanimously adopted:

WHEREAS, The work accomplished by the Domestic Science Association during the past year has been productive of such good results, awakening the interest of both city and country women in the improved methods of house work and home life, and

WHEREAS, We appreciate the increased interest taken in our county farmers' institutes by aid of the domestic science associations, therefore be it

Resolved, That we heartily endorse the work of the Domestic Science Associations for the year just closed.

Director Moore moved that no officer or person shall have the power to award a scholarship to the college of agriculture of Illinois for any county or district without the written consent of the director of the district.

Motion adopted.

Director Coolidge moved that the directors be requested to make no dates for county or district institutes in conflict with the annual meeting of the Illinois Live Stock Breeders' Association, on the 19th, 20th and 21st of November, or the corn breeders' annual meeting at Champaign from the 13th to 26th of January, 1902, or the State Dairymen's meeting, or the meeting of the State Horticultural Society on December 11 and 12, 1901.

Motion adopted.

Director Grout moved that the bill of H. B. Gurler, for services as speaker at the State institute at Mt. Vernon, referred to the Board by the executive committee, be allowed, and a warrant drawn in payment of same.

Motion adopted.

Director Mills offered the following resolution and moved its adoption:

WHEREAS, The following named gentlemen retire from the board at this meeting; and

WHEREAS, Said members have rendered the Illinois Farmers' Institute and the agriculture of the State valuable service in connection with this organization; and

WHEREAS, The retiring members have endeared themselves to each director by their patriotic and intelligent service; therefore, be it

Resolved, That the Illinois Farmers' Institute hereby extend to Hon. C. D. Bartlett, of Bartlett, Ill., and Hon. Oliver Wilson, of Magnolia, Ill., our sincere thanks for their able services as members of this board, and that we will ever hold them in grateful remembrance for their valuable service, courtesy, and the pleasure of being associated with them in the work of the Illinois Farmers' Institute.

Resolution adopted.

Director Easterly moved that the Chair appoint a committee to wait upon the Secretary of State to secure the furniture of the Farmers' Institute.

Motion adopted.

The Chairman appointed Messrs. Moore, Coolidge and Kimzey as such committee.

Director Burroughs, chairman of the Auditing Committee, submitted the following report:

SPRINGFIELD, Feb. 26, 1901.

To the President and Board of Directors of the Illinois Farmers' Institute.

Gentlemen:—We, your auditing committee, take leave to report that we have made a careful examination of the books of Secretary A. B. Hostetter and Treasurer A. P. Grout, and desire to make the following report:

The treasurer's report shows having paid out—

	Appropriation.	Paid out.	Balance.
Office expenses, etc.....	\$1,300 00	\$844 12	\$455 88
Salary secretary, etc.....	1,760 00	760 00	940 00
Aid District Institutes.....	800 00	356 58	443 42
Domestic Science.....	300 00	46 46	253 54
Library.....	500 00	487 59	12 41
General fund, directors, etc.....	1,759 14	1,024 67	734 47
Contingent fund.....	1,400 00	.....	1,400 00
		\$3,519 42	\$4,239 72
Old warrants outstanding, 1,297.....		27	
.. .. 1,153.....		82	
.. .. 1,367.....		\$1 20	
.. .. 1,385.....		1 40	
			3 69
Leaving a balance in the hands of treasurer of.....			\$4,243 41

The secretary's books show orders drawn and unpaid chargeable to the following accounts:

Office expenses, etc., 1595.....	\$5 00	
.. .. 1600.....	6 25	
.. .. 1601.....	5 25	
.. .. 1611.....	4 00	
.. .. 1613.....	4 20	
.. .. 1614.....	4 29	
.. .. 1615.....	9 23	
.. .. 1616.....	4 25	
.. .. 1617.....	169 25	
.. .. 1618.....	90	
.. .. 1623.....	22 00	
.. .. 1631.....	6 46	
.. .. 1632.....	6 00	
.. .. 1633.....	3 50	
	\$250 58	\$250 58
Salary of secretary, etc., 1619.....	125 00	125 00
Aid of Dist. Institutes, 1579.....	35 04	
.. .. 1608.....	50 00	
		85 04
Amount forwarded.....		\$460 62
Domestic Science Association, 1590.....	\$28 70	
.. .. 1591.....	10 00	
.. .. 1592.....	9 18	
.. .. 1593.....	10 51	
.. .. 1609.....	8 50	
.. .. 1610.....	6 18	
.. .. 1612.....	5 92	
.. .. 1625.....	7 15	
.. .. 1635.....	9 81	
		\$95 95

General fund expenses, directors, etc.,	1588	\$28 00
..	1589	10 40
..	1594	29 30
..	1596	5 00
..	1597	18 83
..	1598	15 85
..	1599	9 59
..	1602	43 30
..	1603	12 45
..	1620	69 90
..	1621	43 93
..	1622	14 01
..	1623	3 30
..	1624	22 60
..	1627	8 48
..	1628	11 40
..	1629	38 88
..	1630	20 30
..	1634	60 95
..	1636	13 31
..	1637	29 77
..	1638	2 25
..	1639	17 77
..	1640	29 60
..	1641	12 80
..	1642	12 00
..	1643	40 82
..	1643	6 36
Total		\$631 06
Total		\$1,187 63

Balance remaining to the credit of the following funds:

Office expenses, postage, etc.	\$205 30
Salary, secretary, etc.	815 00
Aid district, institutes	358 38
Domestic Science Association	157 59
Library	12 41
General expenses, directors, etc.	103 41
Contingent fund	1,400 00
Total	\$3,052 09

Respectfully submitted,

E. W. Burroughs,
C. D. BARTLETT,
F. I. MANN,
H. G. EASTERLY,
L. N. BEAL,

Committee

Director Hughes moved that the report of the auditing committee be approved, spread upon the records and placed on file.

Motion adopted.

Director Grout reported that the bill of Calhoun county had been referred to him by the executive committee and that he had examined into all the circumstances connected therewith and would recommend that the sum of thirty-five dollars and forty cents (\$35.40) be allowed in payment of same.

Director Coolidge moved that a warrant for \$35.40 be drawn in favor of Calhoun County Farmers' Institute in payment of the expenses of the institute meeting as per the recommendation of the director from that district.

Motion adopted.

There being no further business, Director Bartlett moved that the Board do now adjourn *sine die*.

Motion adopted.

Read and approved May 21, 1901.

A. B. HOSTETTER,
Secretary.

W. R. KIMZEY,
President.

ANNUAL REPORT OF COUNTY FARMERS' INSTITUTES.

ADAMS COUNTY FARMERS' INSTITUTE,

Held in Opera House, Clayton, Illinois, November 16th and 17th, 1900.

Program—Friday, November 16th. Morning session, 9:30.

Music. Prayer, Rev. E. J. Rice, Clayton; welcome address, Dr. J. N. Black, Clayton; response, E. L. Grosh, Big Neck; address, President S. N. Black, Clayton.

Afternoon session, 1:30. Women's session, Domestic Science Club, Mrs. Emma Nevins, president.

Music, Mrs. S. Curry, Camp Point; "Household Economy," Mrs. E. A. Lucas, Mounds; recitation, Mrs. Kate Campbell, Mt. Sterling; music; paper, Mrs. Fred Seaton, Camp Point; recitation, Miss Kate Flynn, Clayton; music; paper, Mrs. J. E. Kirkpatrick, Clayton; paper, Cora Dickhut, Fowler; recitation, Miss Flora Cutter, Camp Point; "Music in the Home," Mrs. Ella Anderson, Clayton.

Evening session, 7:30.

Music; recitation, "Since Ma's Qualified to Vote," Chas. Badgely, Clayton; "The Ideal Farmer," J. B. Vandeventer, Mt. Sterling; instrumental music, Willard Stewart, Golden; "Types of Cattle," A. P. Grout, Winchester; music.

Saturday, November 17th. Morning session, 9:30.

Music; "Why Young Men Leave the Farm," H. Schmeedeskamp, Camp Point; "Hogs on the Farm," Robert D. Moore, Kellerville; "Codling Moth and Curculio," Daniel Shank, Clayton; "Should the Average Farmer be a Specialist?" C. J. Davis, Mounds; "Growing Strawberries," W. I. Bates, Camp Point.

Afternoon session, 1:30.

Any business pertaining to the Institute; "Clover on the Farm," Clelland, Wagg, Rainville; "The Angora Goat, Its Profit and Uses," Geo. H. Baldwin, Mendon; "Growing and Training Horses," J. W. Randles, Big Neck; "Other Crops than Clover for Fertilizing the Soil," B. B. Starr, Mendon; "Work of Farmers' Institutes," Walter Vanzil, Carthage.

Opera house, Plainville, Illinois, Friday and Saturday, May 24 and 25, 1901.

Officers—S. N. Black, President, Clayton; E. S. Frank, Treasurer, Clayton; E. L. Grosh, Secretary, Big Neck.

Friday, May 24. Morning session, 9:30 o'clock.

Music; invocation, Rev. J. W. Keathly, Plainville; welcome address, Jas. W. Madison, Plainville; response, S. N. Black, Clayton; Pure-Bred vs. Mongrel Fowls, J. C. Barker, Richfield.

Afternoon session, 1:30 o'clock.

Music; recitation, Miss Myrtle Madison, Plainville; Training of Domestic Animals, E. S. Frank, Clayton; Domestic Economy, Mrs. Nellie Wheeler, Quincy, R. D. I.; How to Grow and Handle an Orchard, H. C. Cupp, Fall Creek.

Evening session, 7:30 o'clock.

Music; recitation, "When Father Was a Boy," Chester A. Maybury, Plainville; Quack Doctors: The injury being done by endorsement of lawyers, ministers, etc., C. S. Booth, Camp Point; music; address, "Farmers' Boys," C. L. Cain, Golden; What the Institute Is Doing, Hon. Geo. W. Dean, Quincy, R. D. I.

Saturday, May 25. Morning session, 9:30 o'clock.

Music; Vegetables for the Farmer and How to Grow Them, J. B. Frisbie, Mendon; The Needs of the Community, A. M. Carter, Plainville. Question box.

Afternoon session, 1:30 o'clock.

Election of officers; locating the next institute; any business pertaining to the institute; Feed for Profit, McClellan Wagg, Plainville; Cattle Feeding, Earnest T. Robbins, Payson.

Average daily attendance first meeting, 100; cost, \$39.97. Average daily attendance second meeting, 300; cost, \$29.10.

Officers for ensuing year—President, secretary, treasurer.

BOND COUNTY FARMERS' INSTITUTE,

Held at Sorento, Thursday and Friday, December 27, and 28, 1900.

Officers—President, E. P. Gracey, Sorento, Ill.; secretary, I. H. Denney, Sorento; treasurer, F. Dressor, Sorento.

Program, first day—Morning.

10:00, meeting called to order by the president; 10:05, music by the McReaken orchestra; 10:20, invocation by Rev. C. R. Zahniser; 10:30, address of welcome by E. P. Gracey; 10:40, music by the orchestra; 11:00, response by E. W. Burroughs, Edwardsville; 11:20, music by the orchestra; 11:00, address, "Baby Beef," by L. A. Spies, St. Jacob; 12:00, adjourn.

Afternoon.

1:30, music by the orchestra; 1:30, Address, "General Farming and the Farm Telephone," by Arthur Wale, Butler; 2:30, music by the orchestra; 2:40, address, "Succession of Green Crops," by L. A. Spies, St. Jacob; 3:15, music by the orchestra; 3:30, miscellaneous talks; 4:00, adjourn.

Second day—Morning.

10:00, meeting called to order by the president; 10:05, music by the orchestra; 10:15, invocation by Rev. T. J. Overstreet; 10:20, address, "Soil Nitrogen, Sources and Wastes," by Prof. Hugh E. Ward, Urbana; 11:20, music by the orchestra; 11:30, address, "Growing and Marketing Potatoes," by E. W. Burroughs, Edwardsville; 12:00, adjourn.

Afternoon.

1:30, music by the orchestra; 1:40, address, "Making Poultry Profitable," by Fred Grundy, Morrisonville; 2:10, music by the orchestra; 2:20, address, "Use and Abuse of Clover Crops," by Prof. Hugh E. Ward, Urbana; 3:20, music by the orchestra; 3:30, election of officers; 4:00, adjourn.

Average daily attendance, 75. Cost of Institute, \$49.12.

Officers elected for the ensuing year—President, I. H. Denny, Sorento; secretary, Rufus Cruthis, Sorento; treasurer, F. Dressor, Sorento.

ALEXANDER COUNTY FARMERS' INSTITUTE.

Held at McClure, Illinois, Tuesday and Wednesday, November 13-14, 1900.

Officers—Dr. P. H. McRaven, President, McClure; J. T. McClure, Secretary, McClure; Dr. John Sams, Treasurer, McClure.

Tuesday, November 13, 1900. Morning session—10:00 o'clock.

Music; address of welcome, Pres. P. H. McRaven; Poultry on the Farm, W. T. White, Cutler; discussion.

Afternoon session—1:30 o'clock.

Music; Hogs, William H. Rowe, Jacksonville; discussion; music; recitation; Corn Cultivation, Prof. Null, Urbana; discussion; The Horse for the Farmer to Raise, Pres. G. A. Willmarth, Seneca; discussion.

Evening session—7:00 o'clock.

Music; recitation; The Farmer and Education, Prof. T. C. Clendenin, Cairo; Report of Domestic Science Cooking School, State Fair, Springfield, Mrs. H. G. Easterly, Carbondale; organization Domestic Science; music.

Wednesday, November 14, 1900. Morning session—10 o'clock.

Music; Rotation of Crops, George Barringer, Jonesboro; discussion; importance of Pure Seed and How to Secure it, Prof. Null, Urbana; discussion; Clover, William H. Rowe, Jacksonville; discussion; Agricultural Education, Pres. G. A. Willmarth, Seneca.

Afternoon session—1:30 o'clock.

Winter Wheat, W. T. White, Cutler; discussion; Forage Crop, Prof. Null, Urbana; discussion; music; Objects of Institutes, H. G. Easterly, Carbondale.

Average daily attendance, 70. Cost of Institute, \$33.54.

Officers elected for the ensuing year: President, C. Marchildon, Thebes, Ill.; secretary, J. T. McClure, McClure, Ill.; treasurer, J. H. Sams, McClure, Ill.

BOONE COUNTY FARMERS' INSTITUTE.

Held at Belvidere, January 9, 10 and 11, 1901.

Officers—President, O. F. Lucas, Belvidere; Vice-President, B. S. Herbert, Belvidere; Secretary, Luther Lawrence, Belvidere; Treasurer, Frank Leach, Belvidere.



Luther Lawrence, Belvidere, Ill.

Program—The several committees will meet and hear reports of the secretary and treasurer.

Opening session—1:30 p. m.

Music; prayer, Rev. DeLoss Tompkins; address of welcome, Mayor Moore; response, O. F. Lucas; Farm Dairying, F. S. DuBois, Belvidere; discussion: The Care of Milk to be Delivered at the Creamery, to Produce Best Result, E. J. Bennett, Belvidere; discussion: Is Ensilage the Best, Most Economical and Profitable Feed? Ray Cunningham, Belvidere; appointment of committees; question box.

Thursday, January 10. Morning session—10:00.

Music; prayer, Rev. Dr. Pierce; Domestic Economy, Mary A. Sabin, Belvidere; Home Life on the Farm, Mrs. Lyman Andrew, Belvidere; The Farmer's Friends, Rev. DeLoss M. Tompkins, D. D.; School Surroundings, L. R. Fritzer, Co. Supt. of Schools, Boone county; question box.

Afternoon session—1:30.

The Country Schools, Prof. Alfred Bayliss—State Superintendent of Public Instruction; Rural Library, Mrs. E. F. Sabin, Belvidere; address—Woman's Worth and Worthlessness, Mrs. A. T. Ames, Belvidere; question box.

Friday, January 11. Morning session—10.

Music; prayer, Rev. Heyland; The Farm Home, Prof. A. J. Snyder, Belvidere; Growing Vegetables for Profit, also Suggestions

on Culture of Flowers, J. W. Lyon, Belvidere; 1901-1901, H. W. Avery, Belvidere; question box.

Closing session—1:30 p. m.

Breeding and Management of Swine, G. A. Willmarth, Pres. Ill. Farmers' Institute, Seneca; discussion; reading—S. Maud Cohoon, Marengo; Fruits on the Farm, O. S. Cohoon, Belvidere; discussion; question box; report of committees and election of officers.

Average daily attendance, 350. Cost of Institute, \$32.69.

Officers elected for the ensuing year: President, O. F. Lucas, Belvidere; secretary, Luther Lawrence, Belvidere; treasurer, T. M. Leach, Belvidere.

BROWN COUNTY FARMER'S INSTITUTE.

Held at Mt. Sterling, November 23 and 24, 1900.

Officers—President, F. D. Nokes, Mt. Sterling; secretary, Robert Means, Hersman; treasurer, Robert Bloomfield, Mt. Sterling, Ill.

Program, Friday, November 23, 10 o'clock a. m.

"The Care and Feeding of Hogs," by Jacob Zimmerman, Mt. Sterling; "Corn Fodder, Its Value, Care and Management," by E. F. Byrns, Scotts Mill—Discussion.

Afternoon session.

Duet, by Misses Alta Six and Florence Vandeventer; reading, by Mrs. Lucy B. McMillen; "Horses," by Col. F. J. Berry, Chicago, Ill.—discussion; recitation, "The Man With the Hoe," by C. W. Montgomery; recitation, "The Real Man with the Hoe," by Miss Edith Riggs; "The Farmer and His Son," by J. B. Vandeventer; "The Care of Farm Animals During Sickness," by Dr. E. M. Nighbert.

Saturday morning.

"Green Fertilizers," by Professor Cyril G. Hopkins, Champaign, Ill.; "Household Economy," by Mrs. Henry M. Dunlap, Savoy, Ill.

Afternoon session.

Duet, by Mrs. and Mr. W. B. Riggs; "Type and Quality of Farm Stock," by A. P. Grout, Winchester, Ill.; "Leaks on the Farm," by G. W. Dean, Adams, Ill.; "The Dairy," by L. A. Powell.

Average daily attendance, 250. Cost of Institute, \$95.31.

Officers elected for the ensuing year—President, C. J. Davis, Mounds; secretary, Robert Means, Hersman; treasurer, Robert Bloomfield, Mt. Sterling.

BUREAU COUNTY FARMERS' INSTITUTE.

Held at Princeton, February 5-6, 1901.

Officers—President, L. R. Bryant, Princeton; secretary, H. E. Waddell, Princeton; treasurer, E. A. Washburn, Princeton.

Program, Tuesday, February 5, 1901, 10 a. m.

Music; prayer; president's address, L. R. Bryant, president Bureau County Farmers' Institute, Princeton, Ill.; appointment of committees; Live Stock v. Grain Farming, F. J. Nye, Tiskilwa; question box.

Tuesday, 1:30 p. m.

Music; Type and Quality in Farm Stock, Hon. A. P. Grout, Winchester; Care and Feeding of Swine for Market, C. C. Pervier, Sheffield; question box.

Tuesday, 7:30 p. m.

Music; The Telephone, C. O. White, Princeton; Public Charities and their Management, Miss Lathrop, member State Board of Charities, Rockford.

Wednesday, February 6, 10 a. m.

Prayer; Free Rural Mail Delivery, C. J. McManis, Princeton; illustrated lecture on Corn Breeding, A. D. Shamel, University of Illinois, Champaign; recitation, "The Farmer Feeds Them All," Ezra Stetson, Neponset; question box.

Wednesday, 1:30 p. m.—Domestic Science session.

The session of Domestic Science Association for business and election of officers will be held Wednesday forenoon, February 6, at Del Monte rooms.

Improvement of Country Schools, Claude Brown, Bureau county superintendent of schools, Princeton; The Benefits Derived from the Study of Domestic Science, Miss Francis R. Horton, from Armour Institute, Chicago; awarding of prizes and reading prize essays; illustrated lecture on Good Roads.

The material for this lecture is furnished by the State Board, and the lecture is here given under the auspices of the Woman's Club of Princeton, Ill.

Wednesday, 7:30 p. m.

Music; Introductory remarks, Mrs. I. D. Page, president Bureau County, D. S. A., Princeton; report of secretary, Miss Donna Pervier, Mineral; Bread Stuffs of Illinois and Bread, Mrs. J. O. Stetson, Neponset; How to Make Farm Life Attractive to Girls and Women, Miss Ada Brown, Milo; recitation, Miss Mary Waddell; Growth of Domestic Science in Illinois, Miss H. Bryant, Princeton.

Average daily attendance, 500. Cost of Institute, \$117.15.

Officers elected for the ensuing year—President, F. J. Nye, Tiskilwa; secretary, Guy A. Bryant, Princeton; treasurer, G. C. Kellog, Tiskilwa.

CALHOUN COUNTY FARMERS' INSTITUTE.

Held at Hardin, October 16 and 17, 1900.

Officers—President, Geo. W. Long, Hilcrest, Ill.; Secretary, S. S. Wing, Hardin; Treasurer, William Mortland, Hardin.

Program—Tuesday, October 16, 1900. Morning session.

10:00 appointment of committees; 10:30, Live Stock Interests, by A. P. Grout, Winchester, Ill.

Afternoon session.

1:30 Bee Keeping, Timothy Stone, Hardin; F. X. Arnholt, Point; 2:00, Mistakes and Leaks on the Farm, George T. Mortland; 3:00, What I Know About a Horse, J. Fowler, Point.

Wednesday, October 17. Morning session.

10:30 Horticulture, Prof. Blair, Urbana, Ill.

Afternoon session.

1:30 Culinary Department, Miss Anna Wood, Hamburg; 2:00, awards on exhibits to be declared.

Average daily attendance, 150. Cost of Institute, \$116.15.

Officers elected for the ensuing year—President, Geo. W. Long, Hilcrest; secretary, William U. Mortland, Hardin; treasurer, William Mortland, Hardin.

CARROLL COUNTY FARMERS' INSTITUTE.

Held at Lanark, Illinois, January 23 and 24, 1901.

Officers—George R. Morris, President, Lanark; W. R. Hostetter, Secretary, Mt. Carroll; John Simpson, Treasurer, Mt. Carroll.

Program—Wednesday, January 23. Morning session.

Meeting called to order by president, George R. Morris, Lanark; address of welcome, Hon. A. J. Lambert, Mayor of Lanark; response and annual address by President Geo. R. Morris, Lanark; paper—Potato Culture, G. W. Sword, Lanark; Soils and Fertilizers, Prof. C. G. Hopkins, University of Illinois.

General discussion of the question, by those present. All are invited to take part.

The Hon. H. H. Gross, of Chicago, will be introduced so that those present may meet him during the noon recess.

Printed reports of the State Horticultural Society, the Illinois State Dairymen's Association and the State Farmers' Institute will be distributed.

Announcement of committees. Adjournment for dinner.

Afternoon session—1:15 o'clock.

Paper—Raising Calves, Albert Hartmann, Mt. Carroll. (Raising winter calves seems to be growing more difficult each year. Some of the most successful stock raisers in the county live near Lanark and are especially invited to take part in the discussion of this question.) Lecture, Prof. C. G. Hopkins, University of Illinois; Good Roads, Hon. H. H. Gross, Chicago, Special Agent U. S. Department of Agriculture.

An opportunity will be given to ask questions of Professor Hopkins and Mr. Gross. Persons having questions that they wish discussed are invited to hand them to the Secretary in writing, and they will be brought before the Institute.

Evening session—7:30 o'clock.

Music, Redline Orchestra, of Lanark; piano solo, Miss Leona Hess, Lanark; recitation, Miss Harlett Redline, Lanark; vocal solo, Mr. Jesse McClure, Lanark; address, Prof. John W. Cook, DeKalb; piano solo, Mr. Earl Smith, Mt. Carroll; recitation, Mr. Noah Wine, Millidgeville; violin solo, Miss Frances Coleman, Mt. Carroll.

It is hoped that Miss Julia Lathrop, of Chicago, will be present at this session and take part in the program.

Thursday, January 24. Morning session—10:30 o'clock.

Paper—Cattle Feeding, Wm. Golding, Argo; discussion, led by D. S. Mackay, of Mt. Carroll, Amos Wolf, of Lanark and other prominent feeders; paper—Poultry on the Farm, H. S. Arnold, Lanark; discussion; paper—Hog Raising, J. Senneff, Fair Haven; reading of prize essays by boys under 18 years on Hog Raising; reading of prize account kept by Tenant Farmer; lecture, Prof. C. G. Hopkins; reports of committees and election of officers.

Afternoon session—2:00 o'clock.

Program in charge of Miss O. Sprecher, Lanark, Mrs. Chas. Beede, Chadwick, Mrs. G. W. Nycum and Mrs. Henry Mackay, Mt. Carroll.

Music, Redline Orchestra, Lanark; piano solo, Miss Minnie Harrington, Lanark; recitation, Miss Ivy Smith, Hickory Grove; reading of prize essays by girls under 18 years on A Good Dinner and How to Get It; vocal solo, Miss Hattie Morris, Lanark; address, Miss Julia Lathrop, Chicago; discussion; violin solo, Miss Frances Coleman, Mt. Carroll; vocal solo, Mr. Jesse McClure, Lanark.

Average daily attendance, 703. Cost of Institute, \$107.90.

Officers elected for the ensuing year—President Amos Yordy, Shannon; secretary, W. R. Hostetter, Mt. Carroll; treasurer, John Simpson, Mt. Carroll.

CASS COUNTY FARMERS' INSTITUTE.

Officers of Farmer's Institute—W. B. Conover, president; Chas. A. Gridley, secretary; John Pratt, assistant secretary.

Officers of Domestic Science Association—Mrs. W. T. Price, president; Mrs. M. C. Petefish, secretary.

Program, Thursday, November 22d. Morning session—9:00 o'clock.

Music, selected; prayer, Rev. Burchitt; address of welcome, Mayor R. H. Mann; response, W. B. Conover; Hog Breeding and Feeding, Hon. G. A. Willmarth, president State Institute; discussion, Hon. A. P. Grout, Winchester; Chas. Rowe, Jacksonville, Chas. Beggs, Ashland; Fred H. Rankin, Athens.

Afternoon session—1:00 o'clock.

Music, selected; address, Mrs. W. T. Price; report of State Fair Cooking School, Miss Ollie Brinkwater; report of Second Annual State Meeting D. S. A., Mrs. W. B. Conover; address, Agricultural Education, President G. A. Willmarth; address, Mrs. I. B. Page, Princeton; Beet Sugar Industry in Illinois, Prof. P. G. Holden, Pekin; Morgan County Agricultural Experiments, Chas. A. Rowe, Jacksonville; Corn Judging Class, Prof. Holden, Fred H. Rankin.

Evening session—7:30 o'clock.

Music, selected; address, Dr. Frank H. Hall, Jacksonville; music, selected; address, The Relation of Landlord and Tenant, Hon. Henry Wallace, Des Moines, Iowa; music, selected.

Friday, November 23d. Morning session—8:00 o'clock.

8:00 a. m. until 9:00 a. m. Instruction in Corn Judging by Prof. Holden and Fred H. Rankin; meeting of the executive committee 9:00 a. m.; music, selected; Cow Peas in Cass County, Richard Jokisch, Bluff Springs; The Modern Corn Binder, John Pratt; Cattle Breeding and Feeding, Hon. A. P. Grout, Winchester; discussion, Marcus Crum, Abe Pete-fish, Robert Thompson and others; Butter Making and Judging, W. H. Stevenson, Jacksonville; election of officers.

Afternoon session—1:00 o'clock.

Music, selected; Illinois Corn Growers Association, Fred H. Rankin; Smut in Small Grain, Prof. Holden; How to Maintain the Fertility of the Soil, Hon. Henry Wallace; awarding premiums; sale of exhibits.

Average daily attendance, 200. Cost of Institute, \$76.90.

Officers elected for the ensuing year—President, W. B. Conover, Virginia; secretary and treasurer, John G. Pratt, Virginia.

CHAMPAIGN COUNTY FARMERS' INSTITUTE,

Held meetings at Rantoul, January 17th, 18th, 1901, and Tolono, February 13th and 14th, 1901.

Officers of Champaign County Domestic Science Association—Mrs. E. B. Hazen, president, Champaign; Mrs. I. S. Raymond, secretary, Philo.

Officers of Champaign County Farmers' Institute—I. S. Raymond, president, Philo; E. O. Chester, vice-president, Champaign; Z. R. Genung, treasurer, Rantoul; J. A. Hossack, secretary, Savoy.

Program—Thursday, January 17th. Morning session, 9:30 o'clock.

Music; invocation, Rev. H. M. Burnett; opening remarks; A Farm and Its Management, I. S. Raymond, Philo; Importance of Pure Seed and How to Secure It, S. F. Null, Assistant Manager Field Crops Experiment Station, U. of I.; appointment of committees. All exhibits competing for premiums must be in place not later than one o'clock.

Afternoon session, 1 o'clock.

Music; Spraying and the Benefits to be Derived from It, Menzo Jordan, Savoy; Farm Machinery. Selection and Care, F. R. Crane, B. S., Farm Mechanics, University of Illinois; Clover, Hon. Joseph Carter, Supt. Public Schools, Champaign.

Evening session, 7:30 o'clock.

Music will be furnished by the High School Glee Club, Rantoul. Reading of prize essays and announcing awards: Miss Susie Susdorf, Thomasboro, 1st prize; Carl Caldwell, Mahomet, 2d prize. Music: A Few Flowers for House and Garden, L. S. Spencer, Tolono; music; Our Agricultural College (illustrated with stereopticon views), F. R. Crane, B. S., University of Illinois. Miss Lulu Snyder, piano; Miss Pauline Neal, violin; Mr. Charles Morris, violin.

Friday, January 18th. Morning session, 9:30 o'clock.

Music; invocation; Improved Methods in Potato Culture, L. S. Spencer, Tolono; Draft Horses, Capt. J. C. Ware, Champaign. Election of officers, reports of committees, announcement of awards, and any other business that may come before the institute.

Ladies' session.

Under the management of the Domestic Science Association of Champaign county.

Afternoon session, 1 o'clock.

Music, piano, Miss Clara Williams, Rantoul; Report of State Meeting at Mt. Vernon, Mrs. Paris Robinson, Philo; a report of the State Fair School of Domestic Science for 1900, Miss Grace Hazen, Philo; The Government Farmer, Miss Lizzie Ferris, Ogden; Teaching Domestic Science, Mrs. Nellie Kedzie, Bradley Institute, Peoria; address, Organization, Mrs. H. M. Dunlap, Savoy.

February 13, 1901. Opening session, Wednesday, 9:30 o'clock.

Invocation; Injurious Insects, illustrated, Dr. John Martin, Tolono; Spraying and the Benefits to be Derived From It, illustrated, Menzo Jordan, Savoy; Importance of Pure Seed and How to Obtain It, DeWitt C. Wing, U. of I., Urbana.

Afternoon session, 1 o'clock.

On the Street, K. P. Band; The Road Question, C. H. Van Vleck, Philo; do., by J. R. Stewart, "Gazette," Champaign; Farm Machinery, Selection and Care, F. R. Crane, U. of I.; Pastures and Meadows, E. E. Chester, Champaign.

Evening session, 7:30 o'clock.

K. P. Band; music by the Tolono High School Girls' Glee Club; reading of prize essays and announcing awards; K. P. Band; Vegetables, Fruits, Flowers, L. G. Hubbard, Urbana; K. P. Band; The Outlook for the Illinois Farmer, Prof. E. Davenport, U. of I.

Morning session, Thursday, 9 o'clock.

Oats Culture, Cultivation, Seeding, Varieties, Robert Penman, Philo; Oats Culture, Harvesting, How to Shock and Stack, Martin Kearns, Philo; Potatoes, Seed and Varieties, L. S. Spencer, Tolono; Type and Quality in Farm Animals, W. J. Kennedy, U. of I.

Ladies' session, 1 o'clock.

Opening by Tolono High School Band; Report of State Meeting at Mt. Vernon, Mrs. Paris Robinson, Philo; Report of State Fair School of Domestic Science, Miss Grace Hazen, Philo; Domestic Science in the Rural Schools, Mrs. S. Noble King, Bloomington; piano selection, Miss Lucy K. Moore, Tolono; The Aim of the Department of Household Science at the University of Illinois, Miss Isabel Bevier, Dean of the Department, Report of Secretaries of Household Clubs in the county; Life in Paris, Mrs. H. M. Dunlap, Savoy.

Average daily attendance, 150 and 400. Cost of Rantoul meeting, \$106.50; cost of Tolono meeting, \$91.19.

Officers elected for the ensuing year—President, Isaac S. Raymond, Philo; Secretary, J. A. Hossack, Savoy; Treasurer, Z. R. Genung, Rantoul.

CHRISTIAN COUNTY FARMERS' INSTITUTE.

Fourteenth annual meeting, held in Vandever's Opera House, Taylorville, Illinois, December 12, 13 and 14, 1900.

Officers—President, S. C. Wagener, Pana; Secretary, H. O. Minnis, Edinburg; Treasurer, E. A. Vandever, Taylorville.

Program—Wednesday, December 12. Morning session.

Invocation, Rev. Mr. Thompson; address of welcome, Mayor E. Bach, Taylorville; response, S. C. Wagner, President, Pana; reports of secretary, treasurer and various committees.

Afternoon session—1:30 o'clock. Domestic Science Club.

Prayer, Rev. Mr. Snyder; President's address, Mrs. Harry Grundy, Morrisonville; instrumental music, Mrs. S. C. Wagener; Poultry; cookery school report, (good; ought to be printed; splendid paper), Miss Jessie Adams, Morrisonville, Miss Lydia Headen, Taylorville; Home Making, Mrs. James Adams, Taylorville; vocal music; Domestic Science, Mrs. Nellie S. Kedzie, Peoria; recitation; vocal solo.

Evening session—7:30 o'clock.

Music; The Mission of Farmers' Institutes; recitation (good), Miss Maude Temple, Taylorville; music; paper (splendid), Miss Blanche Webb, Taylorville; Domestic Science, Miss Jennie Barbre, Taylorville.

Thursday, December 13. Morning session—10 o'clock.

Prayer, Rev. W. E. Howard; Breeding and Feeding of Sheep, R. J. Stone, Stonington; discussion by George Large, Taylorville; Breeding and Feeding Swine, H. O. Gorrell; discussion by Q. I. Simpson, Palmer; John Richardson, Edinburg.

Afternoon session—2 o'clock.

Type and Quality of Farm Stock, W. S. Baker, S. C. Wagener, R. J. Stone; discussion and questions; music; Care of Meadows and Pastures; discussion by Harry Grundy, Morrisonville; E. A. Vandever, Taylorville.

Evening session—7:30 o'clock.

Music—America; Agricultural Education, Hon. G. A. Willmarth, Seneca, President Illinois Farmer's Institute; music; paper, Miss Caroline Simpson, Taylorville; recitation, Samuel Maxwell, Millersville; music; European and American Farming Contrasted, Maj. W. T. Vandever.

The music for this session was furnished by the Taylorville Choral Union, under the direction of T. L. Rickaby.

Friday, December 14. Morning session—10 o'clock.

Prayer, Rev. T. A. Parker; Breeding, Care and Raising Horses for the Market, Thornton Hunter, Col. W. T. Baker; Home Dairying, A. Hubenstrict, Blue Mound; discussion by Edgar Clark, Jr., Pana; Mrs. G. M. Wilson, Morrisonville, (a fine paper).

Afternoon session—2:00 o'clock.

Music; reports of committees, election of officers, etc.; Public Highways and How to make them, Howard H. Gross, U. S. Department of Agriculture; report committee on roads, Thornton Hunter, Taylorville, George Maxon, Morrisonville; adjournment.

Average daily attendance, 400. Cost of institute, \$75.

Officers elected for ensuing year—President, R. J. Stone, Stonington; secretary, Edgar L. Clarke, Pana; treasurer, E. A. Vandever, Taylorville.

CLARK COUNTY FARMERS' INSTITUTE,

Held at Marshall, November 21, 22 and 23, 1900.

Officers—President, J. W. Adams, McKeen, Ill.; Secretary, J. A. Sweet, Marshall; Treasurer, Joseph Lutz, Marshall.

Program—First day.

Prayer, Rev. H. Huston; address of welcome, Mayor C. A. Purdunn; response, President J. W. Adams; reading and approving minutes.

Afternoon session.

Farmers' Mutual Insurance, Ira J. Bell, Springfield; Broom Corn, I. W. Sain, Casey; Growing Cow Peas, J. J. Meehling, Hugo Faust and Robert English.

Night session.

Address, "Better Education for the Farm Boys and Girls," Mrs. J. J. Southworth, Allerton.

Second day.

Propagating Seed Corn, J. W. Sheapley; Fruit Growing, Joseph Lutz; Sheep Industry, Cy. Yealey.

Afternoon session.

Types and Quality of Farm Stock, illustrated, A. P. Grout; Good Roads and other subjects to be discussed.

Night session.

Address, Prof. W. M. Evans, of the Charleston State Normal.

Third day—Woman's day.

Music and prayer: Farm Work, Mrs. J. J. Southworth; Practical Poultry Raising.

Afternoon.

Managing the Farm Boy, Mrs. Robert English; Flower Culture, Mrs. Cornelia McNary, Martinsville.

Plenty of music during each session. All subjects are open for discussion. Educational exhibit in Superintendent's office. Exhibit of farm products in Claypool Building.

Average daily attendance, 100; cost of institute, \$85.73.

Officers elected for the ensuing year—President, J. J. Meehling, Marshall; Secretary, Robert English, Marshall; Treasurer, Geo. W. Tobias, Marshall.

CLAY COUNTY FARMERS' INSTITUTE,

Held at Flora, Illinois, Tuesday and Wednesday, November 27 and 28, 1900.

Officers—President, John F. Harrell; Secretary, John T. Campbell; Treasurer, A. E. Shinn.

Tuesday, Nov. 27, morning session, 10:00 o'clock.

Music; invocation, Rev. Fr. Mamer; address of welcome, Joseph S. Peak; response to address of welcome, President John F. Harrell; Corn and its Culture, Sam'l White. Discussion, led by J. C. McCullom and Henry Kinnaman. Wheat Culture in Clay County, Albert Harmon. Discussion, led by Wm. H. Jackson and Ben Fields.

Afternoon session, 1:10 o'clock.

Music; Breeding and Feeding the Dairy Cow, W. C. Davis, Fairfield; Cattle, Israel Mills; Discussion, led by P. P. Brown; Hogs, Breed and Care of, Goings. Discussion, led by James Martin. Talks on Poultry Raising for Profit, Mrs. John Golden, August Meyer and Geo. Fry; Pasture and Hay, T. O. Pierce, Xenia; Kitchen Garden, Edgar Hays.

Evening session, 7:15 o'clock.

Music; invocation, Rev. Harman; Home Surroundings and Their Influence, Randolph Smith; Agricultural Education, A. J. Willmarth, President Illinois Farmers' Institute.



John T. Campbell, Louisville, Ill.

Wednesday, Nov. 28, morning session, 10 o'clock.

Music; invocation, Elder Winters; Domestic Talks, led by Mrs. Sam'l White and Pearl Meyer; Essay, Bread Baking, Mrs. Belle McFarland; Essay, The Worry of Housekeeping, Mrs. John Golden; Essay, A Hint on the Science of Cooking, Miss Hattie Parr; discussion; election of officers.

Afternoon session, 1:10 o'clock.

Music; Pest, Variety of Apple and Pear, Joseph Tully, August Meyer; Best Variety of Pears and Small Fruit, Wm. Hannon, James Kurr; Orchard Culture and Pruning, L. A. Michels, Lewis Dilman; Diseases and Injuries of Apple Trees and Fruits, Prof. T. J. Burrill, of the University of Illinois. Announcement of the award of premiums.

Average daily attendance, 150; cost of institute, \$37.10.

Officers elected for the ensuing year—President, A. E. Shinn, Flora; Secretary and Treasurer, C. S. Hays, Flora.

CLINTON COUNTY FARMER'S INSTITUTE.

Held at Carlyle, Ill., December 21-22, 1900.

Officers—President, J. E. Donnewald, Carlyle; secretary, M. P. Crocker, Carlyle; treasurer, John Newkirk, Carlyle.

Fourth annual meeting at the court house, Carlyle, Illinois, Friday and Saturday, December 21-22.

Program, Friday. Forenoon.

Opening address, Wm. Johnston, Carlyle; delegate's report, Geo. Johnpeter, Posey; Orchardling, Berry Ford, Carlyle, discussion; Fertilizing Soil, Rev. A. Deming, Carlyle.

Afternoon.

Diseases of the Horse and How to Cure Them, Prof. Donal McIntosh, University of Illinois; Good Roads, Howard H. Gross, Chicago; query box.

Saturday. Forenoon.

Hay—Its Cultivation and Sale, James McHale, East St. Louis; discussion, led by David Price, Shattuc; Corn, John Beckemeyer, Buxton; The Hog, Stephen Ackerman, Carlyle; discussion, led by Alex. Haag, Carlyle.

Afternoon.

Query box; Dairying, Silos and Silo Building, Euclid N. Cobb, Monmouth; Care of Grain, H. Laux of the Carlyle Mill and Grain Co.; election of officers.

Average daily attendance, 400. Cost of Institute, \$41.73.

Officers elected for the ensuing year—President, J. C. Elsemmyer, Trenton; secretary, John Beckemeyer, Buxton; treasurer, Joseph Helmann, Damiansville.

COLES COUNTY FARMER'S INSTITUTE.

Held at Charleston, Ill., December 20, 21 and 22, 1900.

Officers—President, Thornton Ashbrook, Charleston; secretary and treasurer, Hardy F. Hill, Charleston.

Program, Thursday, December 20. Morning session—10:00 o'clock.

Music; prayer, Rev. J. A. Piper; music; address of welcome, Dr. Montgomery; response, C. R. Doty; annual address, President Ashbrook; election of officers and appointment of committees.

Afternoon session—1:30 o'clock.

Country Schools, Chas. Feagan, ex-county superintendent; Is Farming a Science? Noble Corfer; What the College of Agriculture Is Doing for the Farmers, Harvey Ames, Mattoon; Relation of Landlord and Tenant, or Rent, Henry Wallace Des Moines, Ia.; Our Country Churches, Rev. T. H. Agnew, Humboldt, Ill.

Friday, December 21. Morning session—9:30 o'clock.

Music; prayer, Rev. Mr. Gibbs; music; Good Roads, H. H. Gross, Chicago, Expert Govt. Road Builder; discussion.

Afternoon session. Domestic Science—1:30 o'clock.

Music; address, Mrs. Joseph Carter, Champaign; recitation, Miss Nellie Toland, Humboldt; address, Mrs. Rose Carr, Dis. Pres. Dom. Sci. Association; organization, Dom. Sci. Association.

Evening session—7:30 o'clock.

Music; The Outlook for Young Men on the Farm, D. J. Duncan, Selma, Ind.; The Farm Home, Henry Wallace, Des Moines, Iowa.

Saturday December 22. Morning session—9:00 o'clock.

Music; prayer, Rev. Knox; Poultry for Profit, Mrs. Rose Carr; Artificial Incubation, C. L. Carney; discussion; The Exhaustion and Replenishing of Soils, Prof. Otis Caldwell, of the Eastern Illinois Normal.

Afternoon session. Live Stock. 1:00 o'clock.

Music; Stock Feeding, John Dora; discussion, A. N. Walden.

Average daily attendance, 175. Cost of Institute, \$75.65.

Officers elected for the ensuing year—President, Thornton Ashbrook, Charleston; secretary and treasurer, Hardy F. Hill, Charleston; had exhibit of farm products and prize essays.

CRAWFORD COUNTY FARMERS' INSTITUTE,

Held in the Court House, Robinson, Illinois, Tuesday, Wednesday and Thursday, November 20, 21 and 22, 1900.

Officers—President, John D. Trimble, Trimble; Secretary, Oriel W. Kirk, Robinson; Treasurer, Alex. Delsell, Robinson.

Program—Tuesday, November 20. Morning session, 10 o'clock.

Music, Quartette; prayer; address of welcome, Chas. Sheddan, Robinson; response, C. H. Musgrave, Hutsonville; The Farmers' Horse, Alva Postlewaite, Richwoods; paper, The Care of the Horse, Dr. Ridgeway, veterinary surgeon, Robinson. Question box.

Afternoon session, 1:30 o'clock—Stockmen's session.

The Sheep, Frank Condry, Oblong; The Hog, Charles Coulter, Robinson. Dr. R. C. Morris, of Olney, will tell How and What to Feed to make a 2,000 lb. Beel at 24 Months Old, and a 400 lb. Hog at 8 Months. Remember, he is the Cow Pea man we had last year.

Evening session, 7:30 o'clock.

Address, R. C. Morris, Olney.

Wednesday, November 21. Morning session, 9:30 o'clock.

Music; opening exercises; The Farmers' Wife, Mrs. Eldridge Kinney, Trimble; address, Pure Food, Hanby Jones, Pure Food Commissioner, Olney; A Better Education for Our Boys and Girls, Mrs. J. J. Southworth, Allerton.

Afternoon session, 1:30 o'clock.

Report of Pansy Club, Domestic Science Association, Mrs. Julia Musgrave, Hutsonville; recitation, Esther Everingham; instrumental solo, Irma Lindley; discussion, Mrs. Lucy Ormiston, West York; paper, Mrs. Maggie Musgrave; address, Mother's Awake, Mrs. Rose Carr, Lis; Temperance and Domestic Science, Mrs. E. E. Newlin, Robinson.

Evening session, 7:30 o'clock.

Opening exercises; paper, Mrs. Savilla Shipman, Hardinsville; recitation, Nellie Musgrave, Hutsonville; address, Our Inheritance, Prof. W. M. Evans, Charleston.

Thursday, November 22. Morning session, 10:30 o'clock.

Opening exercises; an Illustrated Talk on Farm Drainage, J. M. Hollinsworth, Ridge Farm; Horticulture, H. Augustine, Normal; Agricultural Education, G. A. Willmarth, Seneca.

Afternoon session, 1:30 o'clock.

Opening exercises; The Farmer Boy, J. M. Hollinsworth, Ridge Farm; The Grasses, Harvey Ritchey, Flat Rock; The Successful Farmer, Herbert Athey, Eaton; The Future of the American Farmer, C. H. Musgrave, Hutsonville. It is expected that all questions will be discussed a reasonable length of time by the members of the institute.

Average daily attendance, 75; cost of institute, \$52.30.

Officers elected for the ensuing year—President, J. D. Trimble, Trimble, Ill.; Secretary, O. W. Kirk, Robinson; Treasurer, Alex. H. Dalzell, Robinson.



O. W. Kirk, Robinson, Ill.

CUMBERLAND COUNTY FARMER'S INSTITUTE,

Held at Greenup, December 6-7, 1900.

Officers—President, R. H. Catey, Timothy; secretary, C. C. Leggett, Greenup; treasurer, Mrs. Alice Deep, VeVay Park.

Program, Thursday—Open at 9:30 a. m.



C. C. Leggett, Greenup, Ill.

Average daily attendance, 200. Cost of Institute, \$47.73.

Officers elected for the ensuing year—President, F. D. Voris, Neoga; secretary and treasurer, H. A. Aldrich, Neoga.

Music, Greenup Band; prayer, Rev. J. A. Rousey, Greenup; address, Rev. F. F. Thomas, Greenup; Response, W. A. Catey, Greenup; Poultry, J. N. Nees, Greenup; discussion; music; adjournment to dinner.

Afternoon session 1:30 p. m.

Music, band; prayer, Rev. Frances Cheney, Greenup; District Works, D. H. Shanks, Paris; How to Supply and Maintain the Fertility of the Soil, Prof. H. E. Ward, Urbana; discussion; Corn and Corn Culture, P. J. Bowman, Greenup, A. H. Yanaway, Toledo; discussion; music; prayer, Rev. Sam. Price Greenup; adjournment for supper.

Evening session.

Music, band; prayer; trio, Misses Bessie Jenuine, Jessie Stewart, Dell Meeker; paper, The Country School as an Ally of the Farmer, Prof. T. S. Hewerdine; Motion Song, primary pupils; talk, University of Illinois, Prof. H. E. Ward; Song, High School pupils; paper, State Uniformity of Text Books, Rev. Rousey; song, ladies' quartette; dialogue, arranged by Rev. Thomas; song, Master Fleet Thomas; paper, Why Our Leaders Come From the Country, Prof. W. E. Lugenbeel; song, High School pupils.

DEKALB COUNTY FARMER'S INSTITUTE,

Held at Sycamore, December 27, 28 and 29, 1900.

Officers—President, O. F. Holcomb, Sycamore; secretary and treasurer, B. F. Wyman Sycamore.

Program, Thursday, December 27. Morning session—10 o'clock.

Music; prayer, Rev. H. D. Kimball; address of welcome, Mayor Syme; response, President Holcomb; address, Farming as a Progressive Science, A. S. Collins, Harvard, Ill.; appointment of committees.

Afternoon session—1:00 o'clock.

Music; Treatment of Oats for Smut, A. D. Shamel, University, Ill.; discussion; Farming Compared with Other Avocations in Life, D. J. Carnes, Sycamore, Ill.; Agricultural Education, G. A. Willmarth, Pres. State Institute.

Evening session—7:00 o'clock.

Music, quartet; recitation, selected, Mrs. Edith Bartlett, Chicago; Public Charities and Their Management, Julia Lathrop, member State Board of Charities, Chicago; music; recitation, Miss Marie Garvey; recitation, Sanford Holcomb; address; music, quartet; recitation, selected, Mrs. Bartlett; Whistling solo, Miss Zaida Brown, DeKalb.

Friday, December 28. Morning session—9:30 o'clock.

Music; recitation, selected, Mrs. Bartlett; Corn Breeding, A. D. Shamel; discussion; The Inducements of Farm Life to the Young People of Today, A. S. Collins; Keeping a Flock of Ewes at a Profit, H. D. Hughes, Antioch, Ill.; discussion.

Afternoon session—1:00 o'clock.

Music; recitation, selected, Mrs. Bartlett; Good roads and How To Get Them, Howard H. Gross, special agent and expert, office public road inquiries, U. S. department of agriculture; Experiences In Building Roads by the Road Commissioners of the County; free discussion of the road question.

Evening session—7:00 o'clock.

Music, quartet; recitation, selected, Mrs. Bartlett; The Child of Neglect in Town and Country, Julia Lathrop; music; whistling solo, Miss Brown; recitation, Miss Garvey; address; music, quartet; recitation, Sanford Holcomb; recitation, selected, Mrs. Bartlett.

Average daily attendance, 400. Cost of Institute, \$189.30.

Officers elected for the ensuing year—President Hiram Holcomb, Sycamore; secretary and treasurer, B. F. Wyman, Sycamore.



B. F. Wyman, Sycamore, Ill.

DEWITT COUNTY FARMERS' INSTITUTE,

Held at Clinton, December 18, 19 and 20, 1900.

Officers—President, Charles Walker, Clinton; Secretary, Frank W. Cline, Clinton; Treasurer, Charles Walker, Clinton.

Program—Tuesday, December 18. Morning session, 9:30 o'clock.

Prayer, Rev. C. W. E. Gossow; music, piano solo, Miss Lida Ricks; address of welcome, Mayor John Killough; response, Chas. Walker, president; music, piano duet, Miss Lida Ricks, Miss Minnie Bordner; treasurer's report.

Afternoon session, 1:30 o'clock.

Music, Miss May; recitation, Miss Maud Samuels; recitation, Miss Margaret Stoddard; recitation, Miss Eva May; paper, Needs of Our Rural Schools, Mrs. Hattie P. Wilson; music; recitation, Miss Nannie Latimer; address, Poultry Raising, Mrs. H. D. Young, Sibley; music, Miss Edna Frego; recitation, Miss Lina Brenneman, Minier; address, Domestic Economy, Mrs. S. Noble King, Normal.

Evening session, 7:30 o'clock.

Music, Cornet Solo, G. M. Callison, DeWitt; recitation, Mrs. B. F. Hull; music, Miss Daisy Troxel; reading, Miss Berzie Harrold; address, Farmers' Wives and Daughters, Miss Lina Brenneman, Minier.

Wednesday, December 19. Morning session, 9:30 o'clock.

Prayer, Rev. E. A. Gilliland; music, piano solo, Miss Bessie Berkholder; paper, Raising and Marketing Hogs, E. L. Hoffman, Waynesville; general discussion, E. Shaw and Wm. H. Cantrell; music, piano duet, Miss Agnes Edmonson, Miss Lillie M. Compton, Maroa; Raising Apples and Care of Orchards, Edwin Weld, Jr.; general discussion, Jas. Marron.

Afternoon session, 1:30 o'clock.

Music, piano solo, Miss Edith Smith; recitation, Miss Anna Coady; address, Corn Culture and Treatment of Oats and Wheat for Smut, O. D. Center, Champaign Uni.; general discussion, W. S. Herald, C. Y. Miller; music, vocal solo, Mrs. J. R. Bosserman; address, Cross Breeding in Farm Animals, E. E. Chester, Champaign; general discussion; address, Good Roads, H. H. Gross.

Evening session, 7:30 o'clock.

Music, vocal solo, Chester Ives, Wapella; instrumental music, High School Mandolin Club; paper, The Farmer and the Country Newspaper, G. W. Hughes; music, High School Quartette; recitation, Miss Anna McPherson; address, The Agriculture of Europe as compared with that of America, Prof. B. F. Staymate.

Thursday, December 20. Morning session, 9:30 o'clock.

Prayer, Rev. T. A. Canady; music, piano solo, Miss Linnie Marsh, Maroa; report of those taking premiums in corn contest; music, vocal solo, Mrs. Carl Jones; address, Farm Telephones, Arthur Ware, Butler; paper, Building, Maintaining and Benefits of Farm Telephones, J. M. Jeffries, Waynesville; recitation, Miss Bertha Hevington, Wapella.

Afternoon session, 1:30 o'clock.

Music, piano solo, Miss Ollie Day; recitation, Miss Myra Rundle; music, vocal solo, Miss Maud Wheeler; address, Chicago Board of Trade and Warehouse Commission, S. S. Tanner, Minier, Ill. Auction sale of exhibits.

Average daily attendance, 350; cost of institute, \$188.18.

Officers elected for the ensuing year—President, Charles Walker, Clinton; Secretary, Miss Kate Weld, Clinton; Treasurer, W. S. Harrold, Clinton.

Had general exhibit of farm products and prizes.

DOUGLAS COUNTY FARMERS' INSTITUTE,

Held at Arcola, January 8, 9 and 10, 1901.

Officers—President, James Skinner, Arcola; Secretary, Joseph Coombe, Arcola; Treasurer, John Burkey, Arcola.

Program—Tuesday, January 8. Morning session, 9:00 o'clock.

Prayer, Rev. A. W. Mills; report, Treasurer, John Burkey; song, F. M. Higgins, Ottawa; paper, Corn, W. H. Rowe, Jacksonville; question and discussions, by practical corn growers; Farm Insurance, John Parr, Galton; George Wisegarver, Tuscola; question and discussions.

Afternoon session, 1:00 o'clock.

Song, Quartette; paper, Agricultural Education, F. M. Higgins, Ottawa; paper, Good Roads, Prof. Fred R. Crane, Champaign; discussion, Joseph Bouck, Arcola; Nathaniel Monroe, Arthur; Jack Harrington, Filson; James Davidson, Arcola, and other commissioners of Douglas county; Selection and Care of Farm Machinery, Prof. Fred R. Crane, Champaign; questions and discussion; Farm Horses, E. E. Chester, Champaign.

Evening session, 7:30 o'clock.

Exercises by Arcola Public Schools.

Wednesday, January 9, 9:00 o'clock.

Prayer, Rev. Wm. Luce; song, Quartette; paper, Clover, W. H. Rowe, Jacksonville; discussion, Scott Reed, Galton; Joseph Gamble, Filson; W. B. Chandler, Bourbon; Importance of Good Seed, Prof. A. D. Shammell, Champaign; paper, Live Stock versus Grain Farming, E. E. Chester, Champaign; discussion, John I. Bates, Wm. Iles, C. C. Jones, John I. Hall, and others.

Afternoon session, 1:00 o'clock.

How to Profitably Raise Cattle on High Priced Land, A. A. Armstrong, Camargo; questions and discussion; The Chemistry of Corn, Prof. C. G. Hopkins, Champaign; song, F. M. Higgins, Ottawa; paper, Hogs, W. H. Rowe, Jacksonville; questions and discussions; paper, Forage Crops, Prof. A. D. Shammell; questions and discussion.

Evening session, 7:30 o'clock.

Song; address, Effect of Rural Influence on Moral Character, F. M. Higgins, Ottawa; song; address, Social Evolution, or from Country to City, and the Result, Prof. T. C. Clendenen, Cairo; song.

Thursday, January 10, 9:00 o'clock. Women's day—Mrs. Rose Gillespie, presiding.

Prayer, Rev. Edward Beach; song, Quartette; paper, Poultry, Mrs. A. A. Armstrong, Camargo; questions and discussion; The Farm Dairy, Ralph Allen, Delavan; What Illinois is Doing for Her Daughters, Miss Maud Hall, Arcola; Farm Homes, Mrs. J. J. Southworth, Allerton.

Afternoon session, 1 o'clock.

Song, F. M. Higgins; election of officers and delegates to State Convention; Better Education for Country Boys and Girls, Mrs. J. J. Southworth, Allerton; Woman's Sphere from Woman's Standpoint, Mrs. E. Y. McCarty, Tuscola; Domestic Science, Mrs. J. J. Southworth, Allerton.

Average daily attendance, 200; cost of institute, \$122.92.

Officers elected for the ensuing year—President, Joseph Gamble, Arcola; Secretary, Joseph Coombe, Arcola; Treasurer, John Burkey, Arcola.

Had exhibits of farm products.

DUPAGE COUNTY FARMER'S INSTITUTE,

Held in connection with the 8th Congressional District meeting at Wheaton, February 6, 7, 8, 1901.

Officers—Director for 8th District, C. D. Bartlett, Bartlett; president of County Institute, C. D. Bartlett; secretary, Royal T. Morgan, Wheaton; treasurer, James McKee, Eola.

Program, Wednesday, February 6—10 o'clock.

Prayer, Rev. Flack, Wheaton; address of welcome, Mayor H. W. Grote, Wheaton; response, M. Slusser, Downers Grove; secretary's report; appointment of committees.

Afternoon session—1:15 o'clock.

The Cow and Her Feed, L. W. Mitchell, Dixon, Ill.; The Cost of Raising Corn by Actual Test, T. A. Warner, Sibley, Ill.; address, Mrs. Julia Lathrop.

Thursday, February 7—10 o'clock a. m.

Music; prayer, Rev. Carr, Wheaton; Land Owner and Tenant, E. E. Chester, Champaign, Ill.; discussion; Profitable Swine Breeding, Ira Cottingham, Eden, Ill.; discussion; music; Keeping a Flock of Breeding Ewes for Profit, H. D. Hughes, Antioch; discussion.

Afternoon session—1:15 o'clock.

Music; Preventable Diseases, Dr. A. S. Alexander, Evanston; recitation, Mrs. Edith Bartlett, Chicago; Corn Culture—Illustrated, E. S. Fursman, El Paso; music; Need of Further Agricultural Experimentation, Prof. Eugene Davenport, Dean State University, Champaign.

Evening session.—7:30 o'clock.

Music; Farm Homes, E. S. Fursman, El Paso; recitation, Mrs. Edith Bartlett, Chicago; The Work of The College of Agriculture, Eugene Davenport, Champaign; music; address, Rev. Dr. Graham Taylor, Chicago Commons.

Friday, February 8—9:30 o'clock.

Music; prayer, Rev. Waterman, Wheaton; Type and Quality in Farm Stock—Illustrated, A. P. Grout, Winchester, Ill.; recitation, Mrs. Edith Bartlett, Chicago; address, John W. Cook, president State Normal; music; address, Prof. Quackenbush, Dundee, Ill.

Afternoon session—1:30 o'clock.

Music; report of committee; election of officers; address, Prof. Whitney, Elgin, Ill.; recitation, Mrs. Edith Bartlett, Chicago; address, Chas. W. Farr, Chicago.

Evening session—7:30 o'clock.

Music; recitation, Mrs. Edith Bartlett; address; School Sanitation and Decoration, illustrated with Stereopticon Views, Prof. O. T. Bright, superintendent of Schools Cook county; recitation, Mrs. Edith Bartlett; music.

Average daily attendance, 500. Cost of Institute, \$211.60.

Officers elected for the ensuing year—President, C. D. Bartlett, Bartlett; secretary, Royal T. Morgan, Wheaton; treasurer James McKee, Eola.

Had exhibits from schools and for pantry stores and agricultural products.

EDGAR COUNTY FARMER'S INSTITUTE,

Held in the Court House, Paris, Ill., Tuesday, Wednesday and Thursday, December 18, 19, 20, 1900.

Officers—President, J. M. Hollingsworth, Ridge Farm; corresponding secretary, Geo. H. Gordon, Paris; treasurer, C. D. Smith, Grandview; recording secretary, Mrs. S. B. McCord, Paris.

Program, Tuesday, December 18. Morning session—10:00 o'clock.

President's address, J. M. Hollingsworth, Ridge Farm; report of secretary, Mrs. S. B. McCord, Paris; report of treasurer, C. D. Smith, Grandview; How to Judge Corn, F. J. Fessant, Sandford; The Outlook for the Young Farmer, D. I. Duncan, Selma, Ind.

Afternoon session—1:30 o'clock.

Illustrated Talk on Farm House, C. W. Curl, Mays; C. C. Clapp, Grandview; Horticulture for the General Farmer, Prof. J. C. Blair, Urbana.

Evening session—7:30 o'clock.

A Stereopticon Lecture, The Planning of Home and School Grounds, Prof. J. C. Blair, Urbana.

Wednesday, December 19. Morning session—10:00 o'clock.

The Care of Pastures, W. C. Slemons, Paris; address, Clover, Henry Wallace, Des Moines, Iowa.

Domestic Science session—1:30 o'clock.

Education for the Farmer's Daughter, Miss Ita Briscoe, Kansas; Farmers' Homes, Mrs. J. J. Southworth, Allerton; Hygiene in the Home, Dr. Bertha L. Clinton, Paris.

Evening session—7:30 o'clock.

Address, Rent, Henry Wallace, editor "Wallace's Farmer," Des Moines, Iowa.

Thursday, December 20. Morning session—10:00 o'clock.

Horses, A. G. Lycin, Paris; Why the Farmer Should Raise Improved Stock, Henry Wallace, Des Moines, Iowa.

Afternoon session—1:30 o'clock.

Address, The Influence of Good Roads Upon Farm Life and Farm Property, Howard H. Gross, Chicago, special agent and expert, office public road inquiries, U. S. department of agriculture.

Average daily attendance, 200. Cost of Institute, \$78.08.

Officers elected for the ensuing year—President, J. M. Hollingsworth, Ridge Farm; secretary, Geo. H. Gordon, Paris; treasurer, C. D. Smith, Grandview.

EDWARDS COUNTY FARMERS' INSTITUTE,

Held in Woodman Hall, Bone Gap, Illinois, Tuesday and Wednesday, December 4, 5, 1900.

Officers—President, F. A. West, Albion; vice-president, M. E. Shurtleff, Albion; secretary and treasurer, Loren Jack, Albion; corresponding secretary, Walter Rigg, Albion.

Program, Tuesday, December 4. Morning session—10:00 o'clock.

Prayer, Rev. P. C. Carlin, Bone Gap; address by president; appointment of committees; address of welcome, mayor of Bone Gap; response, Robert Mitchell, Princeton, Ind.; report of committee on organization.

Afternoon session—1:00 o'clock.

Music; Agricultural Education, G. A. Willmarth, Seneca; discussion, Rev. Hagens, Albion county superintendent Coles county; spraying, L. N. Beal, Mt. Vernon; discussion, Ansel Gould, Bone Gap.

Evening session—7:00 o'clock.

Music; declamation, Lou Morgan, Bone Gap; essay, Sybil Kitchens, Bone Gap; music; declamation, Lulu Miner, Bone Gap; declamation, Ira Fankes, Bone Gap; music; address, Prof. F. B. Hines.

Wednesday, December 5. Morning session—10:00 o'clock.

Music; prayer; Stock Grazing and Cattle Feeding, Israel Mills, Clay City; discussion, Robert Mitchell, Princeton, Ind.

Afternoon session—1:00 o'clock.

Music; Swine Husbandry, G. A. Willmarth, Seneca; discussion, Israel Mills, Clay City; J. E. Seller, Sugar Creek; Small Fruits and How to Grow Them, Hardy F. Hill, Charles-ton; discussion, L. N. Beal.

Average daily attendance, 300. Cost of Institute, \$82.41.

Officers elected for the ensuing year—President, F. A. West, Albion; secretary, M. E. Shurtleff, Bone Gap; treasurer, Ansel Gould, Bone Gap.

EFFINGHAM COUNTY FARMERS' INSTITUTE AND DOMESTIC SCIENCE ASSOCIATION,

Held in the Court House, Effingham, Ill., December 19, 20 and 21, 1900.

Officers—President, Peter Beever, Effingham; vice-president, George Kincaid, Watson; secretary, L. P. Mautz, Watson.



L. P. Mautz, Watson, Ill.

Music; address, The Farm the Opportunity of the Young Man of Today; Type and Quality in Farm Stock, illustrated, A. P. Grout, Winchester; music; address, Cow Peas as a Fertilizer, J. W. Stanton, Richview, Washington county; music; paper, Feeding Cattle for Market, R. E. Marten, Watson; music.

Evening session, 7:30 o'clock.

Entertainment by Catholic School of the city of Effingham.

Friday, December 21. Morning session, 9:00 o'clock.

Music; address, Truck Farming, E. R. Jinnette, Anna, Union county; music; address, Corn Cultivation and Corn Breeding, Archibald D. Shamel, Urbana; music.

Afternoon session—1:00 o'clock.

Music; address, Silos and Ensilage, W. C. Davis, Fairfield, Wayne county; music; address, Home Insurance, Henry Gruenewald, Shumway; music; report of committees; election of officers.

Average daily attendance, 250. Cost of Institute, \$128.36.

Officers elected for the ensuing year—President Peter Beever, Effingham, secretary and treasurer, L. P. Mautz, Watson.

Program, Wednesday, December 19. Morning session—10:00 o'clock.

Address of welcome, Mayor Groves, Effingham; response, Peter Beever, president of the institute; music; appointment of committees.

Afternoon session—1:00 o'clock.

Music; address, Live Stock Grain Farming, E. E. Chester, Champaign; music; paper on Poultry, Wm. Dyke, Effingham; music; address, Raising and Feeding Hogs, Geo. W. Hirtzel, Shumway; music; address, D. A. Shank, Paris; discussion after each topic.

Evening session—7:30 o'clock.

Entertainment by the Lutheran School of the city of Effingham; recitation, John Wright, Mason; address, Agricultural Education, G. A. Willmarth, Seneca, president of Illinois Farmers' Institute.

Thursday, December 20. Morning session—9:00 o'clock.

Domestic Science Association, Mrs. Gertrude Hand, president district.

Music; paper, Susie Barnard; music; paper, Domestic Science School at State Fair, Mrs. Lula Swengle; address, Farm Home; Better Education for the Country Boys and Girls, Mrs. J. J. Southworth, Alorton, Vermillion county; music; address, Domestic Science, Mrs. Rose S. Carr, president of 19th District, Lila, Jasper county; music; address, Sanitary Condition of the Home, Dr. J. N. Mathews, Mason.

Afternoon session, 1:00 o'clock.

FAYETTE COUNTY FARMERS' INSTITUTE,

Held at the Opera House in Vandalia, Illinois, Wednesday and Thursday, January 30 and 31.*

Officers—President, C. W. Cox; secretary, H. B. Ellicott; treasurer, Dr. R. T. Higgins.

Program, Wednesday morning January 30—10:00 o'clock.

Music; prayer, Rev. Montgomery May; address of welcome, Hon. J. A. Bingham; response, Rev. Naaman Bascom; address, Practical Horse Raising, J. C. Ware, Champaign, Ill.

Afternoon session—2:00 o'clock.

Music; address, Domestic Science, Mrs. H. M. Dunlap, Savoy, Ill.; questions and discussion; address, Soil Fertility, Robert C. Morris, Olney, Ill.; questions and general discussion.

Evening session—7:00 o'clock.

Music; prayer, Rev. J. B. Webb; address, Farm Life and the Farmer's Wife, Mrs. H. D. Young, Sibley, Ill.; questions and general discussions.

Thursday Morning January 31—10:00 o'clock.

Music; prayer, Rev. M. L. Wagner; address, Potato Culture, E. W. Burroughs, Edwardsville, Ill., director 18th Congressional District; questions and general discussion; address, Cow Peas as a Fertilizer, J. W. Stanton, Richview, Ill.; questions and general discussions.

Afternoon session—2:00 o'clock.

Music; address, Poultry Raising, Mrs. H. D. Young, Sibley, Ill.; questions and general discussion; election of officers.

Average daily attendance, 175. Cost of Institute, \$90.87.

Officers elected for the ensuing year—President, C. E. Cox, Vandalia; secretary, H. B. Elliott, Vandalia; treasurer, R. T. Higgins, Vandalia.

FORD COUNTY FARMERS' INSTITUTE,

Held in Town Hall and Opera House, Sibley, Ill., Tuesday, Wednesday and Thursday, January 22-23-24, 1901.

Officers—President, F. A. Warner, Sibley; secretary, J. H. Beagley, Sibley; treasurer, D. A. Taylor, Gibson.

Vice-Presidents—V. G. Way, Drummer; W. T. Gash, Peach Orchard; Henry Benson, Mons; Jas. McBridge, Brenton; H. A. Crandall, Pella; John Kenward, Lyman; Ed Rudolph, Sullivan; A. J. Poole, Buttor; J. C. Steen, Patton; Geo. Arnott, Wall; J. M. Miner, Dix; W. T. Watts, Rogers.

Officers and vice-presidents constitute the executive committee.

Sullivan Township Farmers' Club had charge of the various local committees.

Program, Tuesday, January 22. Afternoon session—1:30 o'clock.

Music, Sibley band; prayer, Rev. J. H. Hobbs; address of welcome, Mayor C. W. Holmes; response, V. G. Way, Proctor; reports of officers; president's address, F. A. Warner; appointment of committees on location, resolutions and election.

Evening session—7:30 o'clock.

Program in charge of Ladies Auxiliary.

Address, Mrs. P. Carroll, Melvin; music; Domestic Science, Miss Margaret Wagner, Guthrie; reading; Farm Life and the Farmer's Wife, Mrs. H. D. Young, Sibley; music.

Wednesday, January 23. Morning session—9:30 o'clock.

Music, Glee Club; prayer, Rev. Stockhowe; Good Roads, H. H. Gross, Chicago; discussion, What Have You in the Cellar?

Afternoon session—1:30 o'clock.

Music; Live Stock for Landlord and Tenant, A. P. Grout, Winchester; discussion, led by A. A. Barrow, Gibson City; Breeding of Corn, illustrated, S. F. Null, University of Illinois; discussion, led by F. A. Warner.

Evening session—7:00 o'clock.

Music; discussion, led by D. A. Taylor, Gibson City; music; ten minute addresses by young men on farm topics in competition for premium offered by Institute; reading.

Thursday, January 24. Morning session—9:30 o'clock.

Music, Glee Club; prayer, Rev. Heinecke; discussion, led by W. C. Mottler, Gibson City; Mechanics on the Farm, O. A. Lindelof, Sibley; discussed by John Conrad and others; reports of committees, election of officers and location.

Afternoon session—1:30 o'clock.

Music; Value of Farmers Institutes, A. B. Hostetter, secretary Illinois Farmers Institute; How to Grow Potatoes, John Miner, Guthrie; discussion, led by Frank Skinner, Sibley.

Average daily attendance, 250. Cost of Institute, \$95.61.

Officers elected for the ensuing year—President John Iehl, Melvin; secretary, W. E. Thompson, Melvin; treasurer, D. A. Taylor, Gibson City.

Had an exhibit of farm and domestic products and prizes of various kinds.

FRANKLIN COUNTY FARMERS' INSTITUTE.

Held at Benton, November 20-21, 1901.

Officers—President, W. H. Carner, Benton; secretary, Marshall M. Neal, Benton; treasurer, C. Moore, Benton.



Marshall M. Neal, Benton, Ill.

Afternoon session.

Public Schools in Connection with Farm Life, T. J. Myers; Breeding and Management of Swine, G. A. Wilmarth, President of Illinois Farmers' Institute; discussion; Spraying, Prof. A. C. Beal, of the University of Illinois.

Thursday, November 22—8:00 a. m.

Called to order by president.

Prayer, Rev. T. O. Holley; Institute Work and Fruit Growing, L. N. Beal, vice-president of Illinois Farmers' Institute; Poultry for Profit, M. P. Clayton; discussion; Public Roads, H. H. Gross, Public Road Expert of Chicago.

Afternoon session.

This session was given up to young people and was presided over by Guy Chapman.

Miscellaneous business.

Election of officers.

Average daily attendance, 150. Cost of institute, \$81.67.

Had exhibit of farm products.

Officers elected for the ensuing year—President, Charles M. Dixon, Parish; secretary, Marshall M. Neal, Benton; treasurer, E. Dillon, Benton.

Program, Tuesday, November 20—8:00 a. m.
Call to order by the president.

Opening song, Benton High School; prayer, Rev. I. S. Hicks; address of welcome, Mayor W. W. Adams; response, J. Martin Vancil; general discussion.

Afternoon session—The afternoon was devoted to Domestic Science.

Instrumental music, Miss Lillian Orr; opening address by President of Domestic Science, Mrs. J. B. Moore; solo, Miss Ethel Phipps; paper by pupil of Springfield Cooking School, Miss Clara Reed, Saline Mines, Ill.; music, Benton Mandolin Club; paper by pupil of Springfield Cooking School, Miss Ethel Sidwell, Fairfield, Ill.; instrumental duet, Kate Hickman and Pearle Spiller; recitation, Bessie Crawford; music, Benton Mandolin Club; paper, Mrs. L. N. Beal; vocal quartette, Clyde Chenault, Percy Phipps, Leah Hubbard and Bessie Crawford; How to Make Salt Pickles, Mrs. John Mulkey; instrumental duet, Kate Hickman and Pearle Spiller.

Evening session—7:30.

Song, Male Quartette; instrumental duet, Kate Hickman and Pearl Spiller; vocal quartette; music, Benton Mandolin Club; solo Leah Hubbard.

Wednesday, November 21—8:00 a. m.

Called to order by president.

Song, Benton High School; prayer, W. J. Battenfield; Apple Growing in Franklin County, Dr. Z. Hickman; discussion; Small Fruits and Melons, C. M. Dixon; Gem Melons for Profit, J. Marshall Jones; discussion.

FULTON COUNTY FARMERS' INSTITUTE AND DOMESTIC SCIENCE ASSOCIATION.

Held in the Opera House, Lewistown, Ill., Tuesday and Wednesday, January 15-16, 1901.

Officers—C. C. McCutchen, president, Norris; E. H. Diehl, secretary, Leeseburgh; Geo. Shawver, treasurer, Lewistown.

Executive Committee—L. R. Emry, Canton; Frank Zoll, Table Grove; Henry Riley, Lewistown; Geo. C. Thompkins, Smithfield; H. B. Rice, Lewistown; C. L. Amrine, Vermont.

Officers Domestic Science Association—Mrs. S. Campbell, president D. S. A.; Miss C. Saville secretary, D. S. A.

Program, Tuesday, January 15th.

Morning session—10:00 o'clock.

Song, America; invocation, Rev. Mayfield, Lewistown; address of welcome, Mayor H. W. Masters; Response, Secretary E. H. Diehl, Leeseburgh; music.

Afternoon session—1:00 o'clock.

Music; Horticulture on the Farm, Capt. H. Augustine, Normal; discussion, Jacob Graber, Ed. Cass, E. H. Diehl, Lewis Rauch, J. E. Fitzhenry, *et al.*

Reports of township vice-presidents.

Announcement of nominating committee and committee on resolutions.

Sugar Beet Industry, Prof. P. G. Holden, Pekin.

Evening session—8:00 o'clock.

Music, piano solo, Miss Zora Arnett, Lewistown; Agriculture in the Rural Schools, Prof. P. G. Holden, Pekin.

Wednesday, January 16—morning session—10:00 o'clock.

In charge Domestic Science Association.

Violin solo, Mrs. Massie, Lewistown; invocation, Rev. Douglas, Lewistown; Report of Cooking School at Illinois State Fair, Miss Mary Zoll, Table Grove; vocal solo, Miss McDowell, Lewistown; Poultry, Mrs. Hughes, Table Grove; piano solo, Miss Mary Rice, Lewistown; Organization, Mrs. Challicomb, Hillsboro.

Afternoon session—1:00 o'clock.

E. H. Diehl, Leeseburgh, Ill.

Ladies' Business Meeting in Presbyterian Chapel. Music, following at Hinde's Hall.

Feeding Problems; the Balanced Rations, H. B. Rice, Lewistown; reports of committees; election of officers; music; Practical Road Making, G. W. Dean, Director 15th Congressional District Institute, Adams; address, Oliver Wilson, Director 14th Congressional District Institute, Magnolia.

The utmost freedom in discussion was encouraged on all subjects set forth in the program.

Average daily attendance, 185. Cost of institute, \$36.63.

Officers elected for the ensuing year: President, C. C. McCutchen, Canton; secretary, E. H. Diehl, Leeseburgh; treasurer, George Shawver, Lewistown.



GALLATIN COUNTY FARMERS' INSTITUTE.

Held at Ridgeway, April 26-27, 1901.

Officers—President, Henry Ives, Shawneetown, Ill.; secretary, George Hanlon, Shawneetown; treasurer, W. A. Peoples, Shawneetown.

Program. First day—Forenoon session.

Music, choir; invocation, Rev. F. C. Pettypool; address of welcome, W. S. Phillips; address on Farmers' Institute, L. N. Beal, director, Mt. Vernon, Ill.; music, choir.

Afternoon session.

Music, choir; invocation, Rev. A. G. Proctor; Insects Injurious to Orchards, J. B. Hale; Poultry, H. P. Melven; Good Roads, Geo. Heubner; music, choir.

Night session.

Music, choir; invocation, Rev. A. G. Proctor; recitation, Judge Hanlon; Our Country Schools, Supt. Will J. Blackard; address, Dr. Daniel Berry, Carmi; music, choir.

Second day. Forenoon session.

Music, choir; invocation, Rev. F. C. Pettypool; Farm Home and Home Adornment, Chas. Carroll, Shawneetown; Domestic Science, Sarah M. Beal, Mt. Vernon, Ill.; Domestic Science at State Fair School, Clara Reid, Saline Mines; Horticulture, My Way of Farming, L. N. Beal, Mt. Vernon; music, choir.

Afternoon session.

Music, choir; invocation, Rev. A. G. Proctor; Wheat Raising, R. M. Rudolph and Ed Brice; Corn Culture, John M. Bowling; Cattle, Martin Doherty and Geo. Edwards; Sheep, James K. Price; Hogs, John McGehee.

Average daily attendance, 150. Cost of Institute, \$72.50.

Officers elected for the ensuing year—President, Henry Ives, Shawneetown, Ill.; secretary, George Hanlen, Shawneetown; treasurer, W. A. Peoples, Shawneetown.

GREENE COUNTY FARMERS' INSTITUTE,

Held with the 16th Congressional District Institute at White Hall, January 10, 11 and 12, 1901.

A. P. Grout, Winchester, director 16th District.

Officers—President, C. I. McCollister, White Hall; secretary, M. B. Ross, White Hall; treasurer, Ed North, White Hall.

Committees—Executive, C. I. McCollister, W. C. Baker, E. J. Pearce, G. S. Vosseller, M. B. Ross.

Reception and Entertainment—Louis Lowenstein, Francis Fowler, Dr. H. W. Hand, White Hall; Donald Simpson, Jr., Carrollton; E. A. Belknap, Greenfield; Geo. W. Witt, Kane; C. W. Holnback, Rockbridge; Spencer Wycoff, Delhi; Geo. W. Long, Hillcrest; H. J. Westake, Pittsfield; W. H. Stevenson, Jacksonville; Henry Miner, Winchester; W. B. Otwell, Carlinville; W. B. Conover, Virginia.

Program—A. P. Grout, Winchester; J. W. Becker, Jerseyville; Donald Simpson, Jr., Carrollton; J. G. Pope, Kane; E. A. Belknap, Greenfield; C. I. McCollister, White Hall; M. B. Ross, White Hall.

Program. Thursday, January 10. Morning session—10:00 o'clock.

Welcome address, Louis Lowenstein, mayor White Hall; response, Henry Miner, Winchester; Open Parliament.

Afternoon session—1:30 o'clock.

Music; Good Roads, H. H. Gross, Chicago; The Horse, Col. J. F. Berry, Chicago.

Evening session—7:30 o'clock.

Music; Woman's Work in the Farmers Institute, Miss Laura Patterson, Belleville; Music, vocal solo, Miss Lucie Miner, Carrollton; Orchards and Orchard Culture, Dr. C. Nash, Jerseyville; music, Double Male Quartette, White Hall.

Friday, January 11. Morning session 9:30 o'clock.

Music; Cow Peas, W. H. Stroddard, Carlinville; Soil Fertility, E. A. Riehl, Alton.

Afternoon session—1:30 o'clock.

Music; Animal Husbandry, Prof. Eugene Davenport, Urbana; Breeding and Management of Swine, G. A. Willmarth, Seneca.

Evening session—7:30 o'clock.

Music, Double Male Quartette, White Hall; Hygienic Surroundings for the Farm Home, Mrs. Nellie Kedzie, Peoria; music; Education on the Farm, F. M. Higgins, Ottawa.

Saturday, January 12. Morning session—9:30 o'clock.

Music; clover, W. H. Rowe, Jacksonville; cattle, Dr. Henry Wallace, Des Moines, Iowa; The General Purpose Farmer, F. D. Moulton, White Hall.

Afternoon session—1:30 o'clock.

Poultry Raising, Wm. Allen, Greenfield; Domestic Science, Mrs. Rose S. Carr, Lis; Corn Raising, Col. W. H. Fulkerson, Jerseyville.

Average daily attendance, 250. Cost of Institute, \$185.98.

Officers elected for the ensuing year—President, A. H. Barrow, Roodhouse; secretary, John Jones, Roodhouse; treasurer, E. M. Husted, Roodhouse.

GRUNDY COUNTY FARMERS' INSTITUTE.

Held at the Court House at Morris, Ill., Friday and Saturday, January 18-19, 1901.

Officers—President, Willis A. Clark, Carbon Hill, Ill.; vice-president, Capt. Wm. Reedon, Morris; treasurer, Fred Harford, Verona; secretary, Clara A. Harford, Verona.

Committees—Reception—J. N. Woods, Gardner; Mrs. Dr. Murray, Morris; Chas. A. Finch, Verona. Executive General Officers.

Program—Friday, January 18. Morning session—10:00 o'clock.

Music; invocation, Rev. Prescott, Morris, Ill.; 10:30, general business and election of officers; 11:00 report of committee on Form of Farm Lease; general discussion.

Afternoon session—1:00 o'clock.

Music; invocation, Rev. O. C. Johnson, Morris; reading, Miss Rose Willson, Mavon; president's address, Willis A. Clark.

Ladies' Session—Conducted by Mrs. J. Wheeler, Mazon; 1:30, vocal solo, Rev. E. L. Newport, Waupunsee; Coarse Breads, Mrs. Belle Walsh, Waupunsee; discussion, Mrs. Louise Walley, Morris, Mrs. Elma Strong, Verona, 2:00, Foods that Build Muscles, Mrs. Overaker, Mazon; discussion, Mrs. Clarence Finch, Verona, Ed. Cryder, Morris; 2:30, Food for Hot Weather, Mrs. Sarah Woods, Gardner; discussion, Miss Emma Stine, Morris, Mrs. H. G. Gorham, Waupunsee; 2:50, Foods for Cold Weather, Mrs. Frank Murray, Mazon; discussion, Mrs. Ella Kingman, Mazon; Mrs. Nick Ragan, Verona; vocal solo, Miss Mae Prescott, Morris; 3:15, report from School of Domestic Science, Springfield, Miss Effie Wheeler, Mazon; general discussion; 3:40, address, Mrs. S. S. Southworth, Allerton, Ill.; Best Method of Feeding Young Children, Mrs. Nellie Meecham, Mazon, Mrs. Martin Finch, Verona; reading, Miss Rose Willson, Mazon.

Evening session—7:30 o'clock.

Music; invocation, Rev. T. S. Oadams, Morris; vocal solo, Rev. E. L. Newport; address, G. A. Wilmarth, State President, Seneca; reading, Miss Rose Willson.

Saturday, January 19. Morning session—9:30 o'clock.

Music; invocation, Rev. C. C. Lovejoy, Morris; Fruits for the Farm, Geo. Wheeler, Mazon; discussion, B. J. Green and E. J. Hull of Waupunsee; Bart White, Goose Lake; music; Why Should we Have Good Roads, N. W. Walsh; discussion, Fred Harford, A. O. Murray, and Clarence Finch.

Afternoon session—1:00 o'clock.

Music; invocation, Rev. Father Meehan, Morris; Address, Corn and Its Commercial Products, B. F. Wyman, Sycamore; discussion, Winnie Finch, E. W. Walworth, Frank Murray and Jesse Finch; address, Effect of Rural Influence on Character, F. M. Higgins, Ottawa; general discussion; music.

Average daily attendance, 150. Cost of institute, \$28.60.

Officers elected for ensuing year: President, Willis A. Clark, Carbon Hill; secretary, Clara A. Harford, Verona; treasurer, Charles A. Finch, Verona.

HAMILTON COUNTY FARMERS' INSTITUTE.

Held with the 20th Congressional District Institute at McLeansboro, November 15-16-17, 1900.

Officers—President, Charles Kornmeyer, McLeansboro; secretary, W. T. McAddams, McLeansboro; treasurer, A. J. Yates, McLeansboro.

Program. Morning session, November 15—10:00 o'clock.

Call to order by the president; prayer by Rev. C. W. Casley; song, Ode to America, Samuel Ward; address of welcome, Mayor J. S. Sneed; response by President Charles Kornmeyer; secretary's report of last meeting; treasurer's report, A. J. Yates; Stock Peas, J. C. Hall; discussion.

Afternoon session.

Call to order by the president. This session was devoted to the Ladies' Domestic Science Association.

Evening session—7:00 o'clock.

Song by quartet; Poultry for Profit, W. H. Carner of Benton; recitation by A. J. Yates; song by quartet.

October 16—10:00 o'clock.

Call to order by the president; prayer by Rev. Osborn; Wheat Culture, Ezekiel Hunsinger, Burnt Prairie, Ill.; discussion; paper, Redtop and Its Care, E. A. Rankin, Fairfield, Ill.; discussion.

Afternoon session—1:00 o'clock.

Animal Type, William J. Kennedy, of Champaign county; discussion; song, E. H. Bowen; Farm Stock, Chas. H. Judd; discussion; recitation; Miss Lula Kornmeyer; Hogs for Profit, H. Ines; discussion.

Evening session—7:00 o'clock.

Song by Hamilton Quartet; paper, Fruit, John Harold; discussion; Corn Culture, O. H. Wood; discussion; song by Hamilton Quartet.

October 17—10 o'clock.

Call to order by president; Improvement of Public Roads, H. H. Gross, Chicago, Ill.; discussion; Clover and Its Benefits, F. A. West, Albion; discussion; paper on Poultry, Mrs. L. E. Kornmeyer.

Afternoon session—1:30 o'clock.

Call to order by the president; recitation, Miss Corean Greenwall; Swine Husbandry, G. A. Wilmarth; discussion; Sheep for Profit, H. L. Tyer; discussion, committee.

Average daily attendance, 250. Cost of Institute \$136.93.

Officers elected for the ensuing year—President Charles Kornmeyer, McLeansboro; secretary, W. J. McAddams, McLeansboro; treasurer, A. J. Yates, McLeansboro.

Had an exhibit of farm products.

HANCOCK COUNTY FARMERS' INSTITUTE,

Held at Court House, Carthage, Ill., Tuesday and Wednesday, November 20-21, 1900, and at Adrian, Ill., Wednesday and Thursday, February 6-7, 1901.

Officers—President, W. B. Marvel, Carthage; secretary, Walter VanZile, Carthage; treasurer, C. N. Dennis, Hamilton

Executive Committee—C. N. Dennis, Hamilton; Philip Richards, Ferris; John Jackson, Niota; D. M. Markellie, Basco; John Bertschi, Pontoosuc; Mitt Preston, Fountain Green; Wm. B. Marvel, Carthage; Thos. Shaw, Dallas City.

Program, Tuesday, November 20, 1900—10:00 o'clock.

Meeting called to order by the president; prayer; address of welcome, A. N. Cherrill, Carthage; response by Secretary of Hancock County Institute, Walter VanZile, appointment of committees; question box.

Afternoon session—1:00 o'clock.

President's address; Gardening, C. C. Hoppe, Warsaw; discussion, Homer Brown, Hamilton; Belgian Hare, Miss Susan Williams, Carthage; Breeding and Cross-Breeding in Swine, I. N. Hosford, Hamilton; discussion, W. C. Bainter, LaHarpe; Preparation of Land for Farm Crops, George Brant, Hamilton; discussion, George Singleton, Adrian; Report of Farmers' National Congress, by One Who Attended.

Evening session—7:30 o'clock.

Music; song by quartette; The Preferment for the Moral and Educated Farmer, E. S. Franks, Clayton; recitation; Practical and the Impractical in Farm Institutes, I. N. Castle, LaHarpe; song, quartette; recitation; song.

Wednesday, November 21. Morning session—9:00 o'clock.

How to Utilize Our Corn Stalks, John Bertschi, Pontoosuc; discussion, B. F. Miller, Carthage; Cultivating Broken Lands for Profit and to Preserve the Soil, Chas. Harder, Ft. Green; Feeding Cows for Milk, C. C. Safford, Hamilton; discussion, Luke Powell, Bowen; Butter Making, C. C. McMillan, Denver.

Afternoon session—1:30 o'clock.

Insects Injurious to Forage Crops and Wheat, Prof. Forbes, Urbana, Ill.; The District School, a reading; election of officers; recitations; adjournment.

Wednesday, February 6. Morning session—10:00 o'clock.

Song; prayer; address of welcome, D. W. Hubbard, Adrian, Ill.; response, W. B. Marvel, Carthage, Ill.; paper, The Up-to-Date Farmer, I. T. Lewis, Powellton, Ill.

Afternoon session.

How to Grow an Apple Orchard for Profit, Homer Brown, Hamilton; To Prevent Waste, A. J. Harris; How to Utilize Corn Stalks, John Bertschi; discussion, R. F. McCall, Ferris; Corn Culture, E. S. Fursman.

Thursday, February 7. Morning session.

The Value of Clover on the Farm, D. W. Hubbard; Farm Drainage, Thomas Singleton; discussion, Lester Rank; Improvement of Roads, John Jackson; Farm Gardening, J. B. Frisbie, Mendon.

Afternoon session.

The Farmer as a Citizen, Wm. Lambert; The Hog a Millstone and How to Use It—All About the Hog, C. O. Denny; reply, I. N. Hosford; discussion, Jesse Wood; How to Earn and Own a Home, Luke Powell, Bowen; discussion, Walter VanZile, Carthage, State Education for the Farmer Boy, Sam Chapman; discussion, George W. Carlisle.

Evening exercises.

About fifteen select singers; paper, The Boy Behind the Gun, Grover Barnard; recitation, Mrs. Tamar Wilson; recitation, Walter Hubbard; recitation, Ethel Bradford; Paper, Black

Carlisle; recitation, Threshing Time, Nelly Richards; song, Ewing Brothers; recitation, Down on Grandpa's Farm, Emmet Roseberry; cornet solo, Dr. Loomis; recitation, Mattie Ward; recitation, Miss Thompson.

Average daily attendance at Carthage meeting, 100. Average attendance at Adrian meeting, 300. Cost of first institute, \$37.35; cost of second institute, \$28.50.

Officers elected for the ensuing year—President, W. B. Marvel, Carthage; secretary, Walter VanZile, Carthage; treasurer, C. N. Dennis, Hamilton. Had exhibits and prizes.

HARDIN COUNTY FARMERS' INSTITUTE.

Held at Karbers' Ridge, October 23-24, 1900.

Officers—President, M. L. Tyer, Cave-in Rock; secretary and treasurer, Edward Schneider, Saline Mines.

Program—Tuesday—Address of welcome, Dr. J. A. Womack; response, M. L. Tyer; report of delegates from different townships as to crop conditions and other matters pertaining to Agriculture; question box.

Noon.

The Farmers' Institute and its Objects, L. A. Beal, Mt. Vernon; Breeding and Management of Swine, G. A. Willmarth, Seneca; The Profitable Cow, M. T. Price; The Wheat Crop of 1900 in Hardin county, Edw. Schneider.

Evening session.

Address, The County School, John H. Womack, County Superintendent of Schools; address, Agriculture Education, G. A. Willmarth; address, Institute Work in the 20th Congressional District, L. N. Beal; Short Talks on Various Subjects.

Wednesday morning—9:00 o'clock.

Music and prayer; Horticulture, L. N. Beal; discussion; Poultry on the Farm, Geo. E. Rose; Grass and Clover, Edw. Schneider, Saline Mines; question box.

Noon.

Election of officers for ensuing year; short addresses by the members of the institute; adjournment.

Average daily attendance, 150. Cost of institute, \$74.75.

Officers elected for the ensuing year—President, M. L. Tyer, Cave-in Rock; secretary and treasurer, Edward Schneider, Saline Mines.

HENDERSON COUNTY FARMERS' INSTITUTE,

Held at Biggsville, October 26-27, 1900.

Officers—Director 15th Congressional District, G. W. Dean; president, H. W. Stewart, Biggsville; vice-president, J. Cecil Brook; secretary, J. Wesley Rankin, Stronghurst; treasurer, D. A. Whiteman, Biggsville.

Friday, October 26. Morning session—10:45 o'clock.

Invocation; A Talk on the Law, J. W. Gordon, Oquawka; Rotation of Crops, Richard Marshall, Stronghurst.

Afternoon session—1:15 o'clock.

Music; Poultry Raising, Mrs. J. H. Stodtman, Decorra; The Incubating System, Mrs. J. W. McClinton, S. O. Henderson; A Talk on the Horse, F. C. Scott, V. S., Kirkwood; discussion, Fruit Canning, led by Mrs. Quinnie Welch, Reed; What Our Girls Should Learn; Mrs. F. Patterson, Oquawka.

Evening session—7:30 o'clock.

Lecture, Farms and Farmer Boys, President David Felmley, Normal.

Saturday, October 27. Morning session—9:30 o'clock.

The Farm Home, Miss Fannie Annegers, Decorra; Song, When the Bloom Is On The Rye, Cithara Ladies' Quartette, Olena; Mutual Farm Insurance, John Carothers, Stronghurst; Home Dairying, Mrs. Charles Davis, Decorra.

Afternoon session—1:30 o'clock.

Music; Farm Help, Samuel Calonge, Stronghurst; Some Common Weeds, John P. Stewart, Biggsville, Cattle Feeding, C. P. Avenall, Monmouth; Child Life on The Farm, Mrs. W. C. Ivins, Stronghurst.

It was requested that persons come prepared to discuss in a general way the topic of Corn Culture. A leader of this discussion was selected.

Average daily attendance, 125. Cost of Institute, \$55.35.

Officers elected for the ensuing year—President, Richard Marshall, Stronghurst; secretary, John Carothers, Stronghurst; treasurer, D. A. Whitman, Biggsville.

HENRY COUNTY FARMERS' INSTITUTE,

Held at Orion, Illinois, December 6-7, 1900.

Officers—President, D. L. Keleher, Orion; vice-president, L. R. Bothwell, Orion; secretary, R. J. McCahon, Orion; treasurer, G. W. Ferguson, Orion.

Committees—Reception, Mrs. Belle Burns, Mrs. Hattie Wayne, Mrs. Nellie Gustafson, C. R. Hanna, Peter Westarlund.

Decoration—M. L. Love, Harry Wright, Mrs. Emily Hanna, Mrs. Dr. Manguson, Mrs. Nellie Stevenson.

Exhibit—F. L. Anderson, W. J. Blodgett, W. C. Jones, D. C. Keller, Perry Westarlund.

Soliciting—Aug. Peterson, D. Warnock, H. D. Keel, M. L. Love, Will L. Lawson.

Program, Thursday, December 6, 1900. Morning session—9:30 o'clock.

Music, piano, Victor Samuelson, Orion; prayer, Rev. P. J. Brodine, Orion; address of welcome, J. Henry Wilson, president village board; response, D. L. Keller, president Farmers Institute; Landowner and Tenant, Mack McKillop, Lynn Centre; Cattle Breeding, Bert Norton, Cambridge.

Afternoon session—1:00 o'clock.

Music, piano, Miss Georgie Minor, Orion; Corn Culture, Prof. P. G. Holden, Pekin; Sheep Husbandry, A. Ruland, Lockport; Roads and Bridges, O. W. Hoyt, Geneseo; Clover and Fertilizer, Henry Wallace, Des Moines.

Evening session—7:30 o'clock.

Music, Eclipse Orchestra; recitation, Miss Annie Warnock, Rural; music, violin solo, Miss Marguerite Smith, Cambridge; The Farm Home and What It Should Be, Mrs. Isabella Love, Galesburg; song, male quartette, Kettering, Aesbadt, Long, Kettering; Domestic Science, Miss Anna Bailey, Moline; music, trio—piano and violin, Cora Samuelson, Marguerite Smith and Bert Samuelson; Public Charities, Their Scope and Tendencies, Miss Susie Howell, Oseo; vocal duet, Mabel Bell and Veta Tomlinson.

Friday, December 7, 1900. Morning session—9:30 o'clock.

Music—piano, Miss Belle Blackfan, Orion; prayer, Rev. H. C. Leland, Orion; Small Fruits and How to Grow Them, Chas. Malcomb, Cambridge; Corn Fodder, Alfred Peterson, Cambridge and Henry Wallace, Des Moines; Swine Husbandry, G. A. Willmarth, Seneca.

Afternoon session—1:00 o'clock.

Music—piano, Miss Carrie Edmandson, Orion; Rural Mail and Telephone, R. J. Forgy, Woodhull; The Best Horse for the Farmer to Raise, Will Cook, Sherrard; Cattle Feeding, Wm. Ringle, Oseo; Farm Life, Saml. McCauslin, U. S. Yards, Chicago.

Evening session—7:30 o'clock.

Music—piano, Miss Ella Bailey, Coal Valley; recitation, Miss Bessie Wayne, Orion; Woman's Sphere From a Woman's Standpoint, Miss Jennie Bailey, Coal Valley; music—piano, Don McCahon, Orion; The Public School, Martin Luther, Geneseo; duet—vocal, Mrs. Dr. Ringnell and Miss Anna Brodine, Orion; duet—piano and violin, Belle Blackfan and J. S. Burns, Orion; Education on the Farm, Arthur Chase, Knox College; song, Male Quartette; benediction, Rev. J. Edmandson.

Average daily attendance, 400. Cost of Institute, \$75.40.

Officers elected for the ensuing year—President, Charles Malcom Cambridge; secretary, Sherman S. Rishel, Cambridge; treasurer, Geo. W. Ferguson, Orion.

Had an exhibit of farm and domestic products.

IROQUOIS COUNTY FARMERS' INSTITUTE.

Held at Gilman, February 14-15, 1900.

Officers—President, David Bromback, Danforth; secretary, J. O. Reeder, Watseka; treasurer, H. C. Center, Watseka.

Program—Thursday afternoon—1:30 o'clock.

Prayer; music; address of welcome, C. N. Saum; response, president; music; The Horse—Col. F. J. Berry, Chicago; music; Horticulture for the Farmer, Prof. J. C. Blair, Champaign.

Thursday evening—7:30 o'clock.

Music, cornet solo, Lindsay; vocal solo, Miss Grace St. John; address, Joseph Carter—Champaign; violin solo, Fred McMurray.

Friday morning—9:00 o'clock.

Prayer; music; Farmers' Mutual Insurance, C. W. Sprague; Rotation of Crops, J. N. Bondurant, Paxton.

Friday afternoon—1:30 o'clock.

Music, cornet solo, Lindsay; Corn, E. S. Fursman; violin solo, Fred McMurray; Corn Breeding, Prof. A. D. Shamel, Champaign.

Friday evening—7:30 o'clock.

Music, violin solo, Fred McMurray; address, Mrs. Nellie S. Kedzie, Peoria, Ill.; cornet solo, Lindsay.

Average daily attendance, 300. Cost of institute, \$121.50.

Officers elected for the ensuing year—President, David Broomback, Danforth; secretary, J. O. Reeder, Watseka; treasurer, H. C. Center, Watseka.

JACKSON COUNTY FARMERS' INSTITUTE.

Held with the 22d Congressional District Institute, at Court House, Murphysboro, Ill., Thursday and Friday, December 6-7, 1900.

Officers—H. G. Easterly, president, Carbondale; T. W. Thompson, vice-president, Carbondale; H. L. Graff, secretary, Murphysboro; Ed. Worthen, treasurer, Murphysboro.

Executive Committee—T. J. Cross, Shiloh Hill; J. W. Jones, Ava; J. M. Schroder, Murphysboro; Ed. Davis, Elkhart; J. H. England, Carbondale; F. P. Parrish, Vergennes.

Program, Thursday, December 6. Morning session—10:00 o'clock.

Music; prayer; address of welcome, Hon. A. B. Garrett, Murphysboro; response, President H. G. Easterly; music; Good Roads and How to Get Them, Hon. H. H. Gross, Special Agent U. S. Department of Agriculture, Chicago; general discussion in which highway commissioners were invited to participate—discussion led by J. L. Miller, Murphysboro. William Keller, Ava; Pasture the Year Round, T. S. Thompson, Carbondale.

Afternoon session—1:30 o'clock.

How to Select and Care for a Flock of Sheep—F. A. Williams, Tamaroa; discussion, Willis Rendleman, Makanda; Richard Lindsey, Etherton; Arthur McGuire, Carbondale; Type and Quality in Farm Stock—illustrated—Hon. A. P. Grout, President Illinois Live Stock Association, Winchester; discussion, A. J. Cross, Murphysboro, Henry Austin, Ava; Poultry Raising, W. T. White, Cutler; discussion, George Hagler, Carbondale, Mrs. John Qualls, Murphysboro.

Evening session—7:00 o'clock.

Music; The Boy and Girl on the Farm, Hon. G. W. Dean, Director 15th District; music; American Citizenship, Prof. Rodgers, city superintendent of schools, Murphysboro; music.

Friday, December 7. Morning session—9:30 o'clock.

Clover, J. W. Jones, Ava; discussion, T. J. Cross, Shiloh Hill; Anderson Crow, Murphysboro; Thos. Crawshaw, Carbondale; Winter Wheat, W. T. White, Cutler; discussion, Frank Friedline, DeSoto, John Davis, Murphysboro and J. M. Brewer, Carbondale; Corn Culture, illustrated by samples, Hon. G. W. Dean, Adams; discussion, Tom East, Grand Tower, Henry Haenline, Fountain Bluff, and J. Bouchier, Carbondale; report of Domestic Science Cooking School at State Fair, Springfield, Mrs. H. G. Easterly; Organization of Domestic Science.

Afternoon session—1:00 o'clock.

Music; election of officers; report of delegates from other counties; How, When and Why We Spray, M. C. Dickson, Parrish; discussion, H. Ed. Allen, T. W. Thompson, Carbondale; Some Reasons Why We Should Protect Our Song Birds, F. A. Williams, Tamaroa; discussion, Prof. S. E. Harwood, Carbondale, Mrs. S. C. Hanson, Murphysboro; What Farmers Should Read, J. H. England, Carbondale; discussion, Ed. Worthen, John Hannah, Murphysboro.

Average daily attendance, 150. Cost of institute, \$73.21.

Officers elected for the ensuing year—President, H. G. Easterly, Carbondale; secretary, J. H. English, Carbondale; treasurer, Ed. Worthen, Murphysboro.

JASPER COUNTY FARMERS' INSTITUTE,

Held in the Court House, Newton; Illinois, Thursday and Friday, December 13 and 14, 1900.

Officers—George W. Larrabee, President, Willow Hill; A. A. Nees, Secretary and Treasurer, Newton.

Program—Thursday, December 13. Morning session, 9:30 o'clock.

Address of welcome, Mayor Hale Johnson; response, President Geo. H. Larrabee, Oblong; Free Rural Mail Delivery, George Corbin, Latona; discussion, Frank L. Shup, Newton; Sheep Husbandry, B. F. Dyson, Silvertown; discussion, W. C. Gilson, Lis.

Afternoon session, 1:00 o'clock.

Session of Jasper County Association of Domestic Science; A Woman's Sphere From a Woman's Standpoint, Mrs. R. A. Honey, Newton; Flowers, Mrs. J. H. Shup, Lis; recitation, Leonard Honey; Nutrition, Miss Eva Chapman, Wheeler; recitation, Miss Dola Howell, Wheeler; The Rights and Duties of Children, Mrs. L. Houchin, Newton; The Woman's Pocket Money, Miss L. Cooper, Newton; The Farmer's Fruit and Vegetable Garden, Mrs. S. Rose, Carr.

Friday, December 14. Morning session, 9:30 o'clock.

Grasses and Clover on Prairie Land in Jasper County, George H. Larrabee, Oblong: discussion, Homer Wright, Hunt City; School Government, Prof. E. B. Brooks, Newton; The Farmer's Highway to Success, Perry A. Lambird, Newton: discussion, A. A. Nees, Newton.

Afternoon session, 1:00 o'clock.

Breeding, Growing and Feeding of the Beef Steer, Mr. John G. Imboden, Decatur: discussion, Mrs. J. J. Southworth, Domestic Science; election of officers.

Average daily attendance, 100; cost of institute, \$75.

Officers elected for the ensuing year—President, G. W. Larrabee, Oblong; Secretary and Treasurer, A. A. Nees, Newton.

JEFFERSON COUNTY FARMERS' INSTITUTE,

Held in the Court House, Mt. Vernon, Illinois. November 22 and 23, 1900.

Officers—S. T. Maxey, President, Mt. Vernon; Nelson Smith, Vice-President, Mt. Vernon; L. N. Beal, Secretary and Treasurer, Mt. Vernon.

Executive Committee—J. D. Simmons, Divide; Wat Ward, Drivers; T. C. Moss, Mt. Vernon; A. J. Cook, Opdyke; S. T. Maxey, Mt. Vernon; Nelson Smith, Mt. Vernon; L. N. Beal, Mt. Vernon.



John F. Beal, Mt. Vernon, Ill.

Mrs. Nettie Holtsclaw: reading, Miss Mattie Hawkfield, Miss Clara Reid, Saline Mines; Butter Making at Home, Mrs. A. R. Merrel; discussion and talks on Homemaking.

Afternoon session, 1:00 o'clock.

Music; Diseases of the Digestive Organs of the Horse, Dr. Donald McIntosh, University of Illinois; How to Keep the Boy on the Farm, H. H. Gross, Special Agent and Expert Office Public Road Inquiry, U. S. Department of Agriculture; baby show; election of officers and other business.

Average daily attendance, 350; cost of institute, \$76.48.

Officers elected for the ensuing year—President, J. Watt Ward, Mt. Vernon; Secretary and Treasurer, John F. Beal, Mt. Vernon.

Thursday, November 22. Morning session—10:00 o'clock.

Song; prayer, Rev. G. L. Turner, Cumberland Presbyterian Church; address of welcome, Mayor G. F. M. Ward; response, Charles H. Judd, Moores Prairie; address, President S. T. Maxey; report of the Secretary and Treasurer, L. N. Beal; report of township officers.

Afternoon session, 1:00 o'clock.

Song, Miss Alma Hollowell; Spraying the Orchard, Prof. A. C. Beal, University of Illinois; A Paper on Spraying, Sim W. Maxey, Ellenburg, Washington; discussion, led by W. H. Greene, S. T. Maxey, Nelson Smith and others; music; The Farm Hand, James R. Piercy, Woodlawn.

Evening session, 7:00 o'clock.

Song, Miss Alma Hollowell; music, selected; recitation, Miss Maude Marteeney; reading, Miss Mattie Hawkins; address, Prof. H. J. Alvis, Supt. Mt. Vernon Schools; music, selected; How to Keep the Boy in School, Prof. W. B. Phillips, Shiloh; music, selected; recitation, Miss Mary Maxey; a Paper on Reading, Prof. Amos Strickland; address on Education, County Supt. of Schools J. M. Hill; music; reading, Prof. E. C. Chamberlain; reading, Miss Mattie Hawkins; At Home on the Farm, Rev. H. B. Douglas; music.

Friday, November 23. Ladies' session—Domestic Science—9:30 o'clock.

Song, Miss Alma Hollowell; prayer; music; address, President Domestic Science Association Mrs. L. N. Beal; address, Secretary Hawkins; papers, Miss Ethel Sidwell, Fair Farm Home, Mrs. W. F. Gaddy; The

JERSEY COUNTY FARMERS' INSTITUTE,

Held at Jerseyville January 8-9, 1901.

Officers—President, Spenser Wycoff, Delhi; secretary and Treasurer, J. W. Becker, Jerseyville.

Program, Tuesday, January 8, 1901. Morning session—10:30 o'clock.

The Wasting of Soil by Washing, M. B. Ross, White Hall; discussion; appointment of committees; noon intermission.

Afternoon session—2:30 o'clock.

The Care of Milk on the Farm, Prof. Oscar Erf, Instructor in Dairy Husbandry, Urbana; Domestic Science, Mrs. H. M. Dunlap, Savoy; organization of Domestic Science Club; awarding township premiums; adjournment.

Evening session—7:30 o'clock.

Music, Our Boys' Orchestra; address, The Man on the Farm; Hon. Hugh A. Orchard, Roodhouse; music, orchestra.

Wednesday, January 9, 1901. Morning session—9:30 o'clock.

Orchards, cultivation, Dr. C. Nash; spraying, Maj. W. E. Carlin; marketing, Dr. A. K. VanHorne; The Breeding and Management of Swine, G. A. Willmarth, president State Institute, Seneca, Ill.; discussion; noon intermission.

Afternoon session—1:30 o'clock.

Some Observations of a Farmer, W. W. Dabbs, Otterville; Some More, Eph Giberson; Preservation of Soil Fertility; E. A. Riehl, Alton; reports of committees; miscellaneous business; awarding of county premiums; adjournment.

Average daily attendance, 250. Cost of Institute \$74.15.

Officers elected for the ensuing year—President, C. W. Simmons, Jerseyville; secretary and treasurer, J. W. Becker, Jerseyville.

Had an exhibit of farm and domestic products.

JO DAVIESS COUNTY FARMERS' INSTITUTE,

Program, Thursday, January 17. Morning session—10:00 o'clock.

Prayer by Rev. Wm. Caton; music; Fencing and Gates for the Farm, Ed Monnier, of Elizabethtown; followed by general discussion; Butter vs. Beef, John Dallyn, Galena; followed by general discussion.

Afternoon session—1:00 o'clock.

Music; Consolidation of Public Schools, Prof. O. J. Kerns, Rockford; general discussion; song; Fruits and Leguminous Plants, Prof. Hartwell, Dixon; music.

Evening session—7:00 o'clock.

Song; address of welcome, P. M. Rindesbacher; response, Prof. Kepner; recitation, Mrs. A. Eustice; song, Mrs. P. J. Moore; five minute volunteer speeches; violin solo, Prof. Hoefle; organization of Institute and election of officers; music.

Friday, January 18. Morning session—10:00 o'clock.

Music; Utilization of the Corn Crop, Chas. Speer, Hanover; followed by discussion; Rape as a Forage Plant, Wm. Skene, Derinda; followed by general discussion; music.

Afternoon session—1:00 o'clock.

Swine Husbandry, G. A. Willmarth, Seneca, Ill.; The Best Horse for the Farm, A. F. Moore, Polo; followed by general discussion; music.

Evening session—7:00 o'clock.

Music; Opportunity, Rev. J. S. Cook; song; recitation, Mrs. A. Eustice; violin solo, Prof. Hoefle; song, Mrs. P. J. Moore.

Average daily attendance, 200. Cost of Institute, \$87.00.

Officers elected for the ensuing year—President, Read Russell, Warren; secretary and treasurer, Frank Boone, Warren.

JOHNSON COUNTY FARMERS' INSTITUTE.

Held at New Burnside, Ill., Friday and Saturday, November 23-24, 1900.

Officers—W. J. Casper, president, New Burnside, Ill.; J. C. B. Heaton, secretary, New Burnside, Ill.; D. W. Mathis, treasurer, Vienna, Ill.

Program—Friday, November 23, 1900. Morning session—9:30 o'clock.

Music; invocation, Rev. G. W. Lauderdale, New Burnside; Improving and Maintaining the Fertility of the Soil, A. H. Floyd, Golconda; discussion; Why so many Farmers Fail to have so Many Necessaries, and a Reasonable Portion of the Luxuries of Life, R. E. Ridenhour, Vienna; T. S. Balance, New Burnside; discussion; What Clover, Cow Peas and Soja Beans will do for a Wornout Farm and a Discouraged Farmer, Robert C. Morris, Olney; discussion; Corn Fodder, its Value and management, N. J. Moseley, Vienna, J. C. B. Heaton, New Burnside.

Afternoon session—1:30 o'clock.

Music; invocation, Rev. L. L. Smoot, Tunnel Hill; What Can the Average Farmer Do to Improve His Condition, J. W. Edmonson, New Burnside, L. L. Smoot, Tunnel Hill; What Has Been Learned the Past Season About Spraying and its Effects, Prof. J. C. Blair, Ph. D., Assistant Prof. of Horticulture of the State, Urbana; Use and Abuse of Cover Crops, Prof. Hugh E. Ware, M. S., Instructor in Soil Physics, Urbana; Wheat Raising, A. H. Floyd, Golconda; Remarks, H. G. Easterly, Congressional District President, Carbondale.

Evening session—7:00 o'clock.

Music; invocation, Rev. G. W. Lauderdale; How to Better Our Public Schools, Miss Sarah J. Whittenberg, County Superintendent of Schools, Vienna; Higher Education for the Farmers' Sons and Daughters, Mrs. G. B. Murrah, President of Creal Springs College, Cereal Springs; music; report from Domestic Science Cooking School, at Springfield, Mrs. H. G. Easterly, Carbondale; harp solo, Mr. Fred Heaton, New Burnside; Social Evolution, or from Country to City and its Results, Prof. Taylor C. Clendennin, Cairo, adjournment.

Saturday, November 24, 1900. Morning session—9:00 o'clock.

Music; invocation; Live Problems in Orcharding, Prof. J. C. Blair, Ph. D., Urbana; discussion; Soil Nitrogen, Sources and Waste, Prof. Hugh E. Ware, M. S., Urbana; discussion; Some Lines of Nature Study, Prof. J. C. Blair, Ph. D., Urbana; discussion; Poultry for Profit, Mrs. U. J. Moseley, Vienna, Mrs. W. J. Casper, New Burnside; discussion; Cheap Pork and How to Make it, J. W. Heaton, and W. J. Casper, New Burnside.

Afternoon session—1:30 o'clock.

Music; invocation; Conservation of Moisture, Robert C. Morris, Olney; Good Roads, Howard H. Gross, Chicago; discussion; The Farmer and Education, Prof. Taylor C. Clendennin, Cairo; Better Combination of Forage Crops and Better Methods of Feeding, Robert C. Morris, Olney; nomination and election of officers; adjournment.

Average daily attendance, 95. Cost of institute, \$75.00.

Officers elected for the ensuing year—President, W. J. Casper, New Burnside; secretary and treasurer, R. W. Alsbrook, New Burnside.

THE KANE COUNTY FARMERS' INSTITUTE.

Held in the Court House at Geneva, Illinois, Tuesday, Wednesday and Thursday, January 29-30-31, 1901.

Officers—R. J. McCornack, president, Geneva; Joseph Ingham, vice-president, Sugar Grove; C. P. Dutton, secretary, Geneva; Henry McGough, treasurer, Burlington; C. D. Bartlett, Bartlett, Ill., Director Eighth Congressional District Illinois Farmers' Institute.

Committees—Program: Robert Burke, C. P. Dutton, B. G. Richmond, J. R. Mason, M. Simons, E. E. Rich. Exhibits: Henry McGough, Geo. A. Beith, Geo. Peck, J. R. Mason, Fred Belden, W. L. Slaker. Reception: Hon. D. Hogan, John McKellar, C. P. Dutton, F. E. George, Thomas Rushton, C. B. Mead, Henry McGough, H. F. Demmer, Jos. Ingham, Robert Burke.

Program—Tuesday, January 29. Morning session—10:00 o'clock.

Prayer, Rev. W. B. Millard, Geneva, Ill.; address of welcome, Mayor D. J. Hogan, Geneva, Ill.; response, Jos. Ingham, vice-president, Sugar Grove, Ill.; music, James M. Shaw, Geneva, Ill.

Afternoon session—1:30 o'clock.

Piano solo, Miss Louise Keyes, Hampshire, Ill.; address, Bacteriology, Tuberculeine and its Effect, Dr. T. J. Burrell, Urbana, Ill.; discussion, Dr. C. P. Lovejoy and H. B. Gurler vs. E. J. Fellows, N. S. Carlisle, J. B. T. Wheeler and others; recitation, Nelson Meyers, Sugar Grove, Ill.; address, Dairy Husbandry, Prof. Wilbur J. Fraser, Urbana, Ill.; discussion, S. N. Wright, John DeLancy, J. P. Mason, Frank Walgamuth, Elgin, and others; music, James M. Shaw.

Evening session—7:30 o'clock.

Music, piano solo, Miss Mabel Hawkins, Geneva, Ill.; recitation, Miss Ivy Stuart Wright, Aurora, Ill.; music, violin solo, Miss Katherine Starr, Miss Nellie Voller, accompanist, Elgin, Ill.; address, The Rural School and its Needs, John Williston Cook, L. L. D., President State Normal School, DeKalb, Ill.; music, St. Charles Quartette, Mrs. Sandow Peck, Miss Minnie Whalen, Messrs. Jordan and Doig.

Wednesday, January 30. Morning session—9:00 o'clock.

Music, piano and violin, Miss Minnie Hanson, Geneva, and Willie Ruddick, Aurora; recitation, Miss Harriet Fowler, Aurora, Ill.; address, Poultry Culture, Its Advancement and Why we Should Encourage It, Mrs. J. M. Denison, Elgin, Ill.; discussion, J. F. Harral, Aurora; John DeLancy, Jr., Elgin, John Sontag, St. Charles, and others; address, Swine Breeding and Pork Making, Hon. Alex. A. Arnold, Galesville, Wis.; discussion, Frank Aucutt, Sugar Grove; Fred W. Belden, Kaneville; and others.

Afternoon session—1:30 o'clock.

Music, piano solo, Miss Collins Buchanan, Elgin, Ill.; recitation, "Helene Phamre," Miss Grace Winchell, Aurora, Ill.; address, Cattle Breeding and Feeding, Hon. Alex. A. Arnold; discussion; address, Breeding and Feeding Sheep, Geo. McKerrrow, Sussex, Wis.; discussion.

Evening session—7:30 o'clock.

Music, flute solo, Roy Rogers, Geneva, Ill.; recitation, "How Uncle Podger Hung the Picture," Miss Marguerite E. Bowen, Elgin, Ill.; violin solo, Miss Julia A. Garfield, Wasco, Ill.; vocal solo, The Yeoman's Wedding Song, Miss Luella A. Skinner, Elgin, Ill.; address, Influence of Patriotic Ideals, Austin K. de Blois, D. D., Elgin, Ill.; music, Geneva Quartette, Misses Lovering, Watrous, Messrs. Dean and Shaw.

Thursday, January 31, 9:00 o'clock a. m.

Music, Miss Daisy Demmer, Geneva, Ill.; recitation, Miss Esther Eckland, Geneva, Ill.; appointment of committee on nomination of officers; address, Cost of Raising Corn, by Actual Test, and Corn Breeding, F. A. Warner, Sibley, Ill.; discussion, open to all; report of committee and election of officers; music, vocal solo, James M. Shaw, Geneva, Ill.

Afternoon session, 1:30 o'clock.

Music, piano solo, Miss Minnie Hanson, Geneva, Ill.; address, the American Farmer, W. M. Beardshear, LL. D., President Iowa State College of Agriculture, Ames, Iowa; address, Cattle Feeding, L. H. Kerrich, Bloomington, Ill.; discussion, open to all.

Evening session, 7:30 o'clock.

Piano solo, Miss Katharine Howard, Aurora, Ill.; recitation, "How the LaRue Stakes Were Lost," Miss Anna Bauman, Aurora, Ill.; vocal solo, Miss Louise Ketchum, Aurora, Ill.; violin solo, George Doane, Aurora, Ill.; address, The Corn Kitchen at Paris, Hon. Clark E. Carr, Galesburg, Ill.; vocal solo, The Rough Rider, Miss Ketchum; America, Geneva Quartette.

Average daily attendance, 1,000; cost of institute, \$168.44.

Officers elected for the ensuing year—President, Joseph Ingham, Aurora; Secretary, C. P. Dutton, Geneva; Treasurer, Henry McGough, Geneva.

KANKAKEE COUNTY FARMERS' INSTITUTE,

Held at Momence, January 23 and 24, 1901.

Officers—President, O. L. Day, Waldron; Vice-President, E. J. Viall, Manteno; Secretary and Treasurer, L. W. Smith, Manteno.

Program—Wednesday morning, January 23, 9:30 o'clock. Good Road session.

Singing, Momence Male Quartette; invocation, Rev. Seaman, Momence; address of welcome, C. E. Carter, Momence; response, President O. L. Day, Waldron; Good Roads, J. F. Schmeltzer, County Surveyor, Monteno; violin solo, D. Burton, Momence; Good Roads and Road Building, H. H. Gross, Special Agent and Expert, Public Road Inquiries, U. S. Dept. of Agriculture, 818 Chamber of Commerce, Chicago.

Wednesday afternoon, 1:00 o'clock. Ladies session.

Duet, Misses Styles and Sergeant; The Domestic Science School at Springfield, Mary B. Wright, Manteno; Bread, Mrs. C. H. Risser, Kankakee; solo, Miss Sergeant, Momence; Foods, Demonstrations of Cooking, Mrs. Harold B. Armstrong, State Lecturer of Wisconsin Institute, 159 66th St., Chicago.

Thursday morning, January 24, 9:30 o'clock. Crop session.

Recitation, Kathryn Allen; Soil Moisture—its conservation, Prof. H. E. Ward, College of Agriculture, Champaign; cornet solo, Carrol Clarke; Comparative Tests in Plant Food, Leon Hay, Kankakee.

Thursday afternoon, 1:00 o'clock. Live stock session.

Song, Momence Male Quartet; Feeding and Grazing Cattle for Profit, John G. Imboden, Decatur; recitation; Prof. R. A. Beebe, Momence; Horses, Col. J. F. Berry, Union Stock Yards, Chicago.

Average daily attendance, 110; cost of institute, \$76.74.

Officers elected for the ensuing year—President, O. L. Day, Waldron; Secretary and Treasurer, Luther W. Smith, Manteno.

KENDALL COUNTY FARMERS' INSTITUTE,

Held at Yorkville, February 5 and 6, 1901.

Officers—President, A. E. Myers, Millbrook; Secretary and Treasurer, Alonzo Stansel, Yorkville; Vice-Presidents, A. C. Gabel, Yorkville; J. C. Shaw, Plattville, and Robert Harvey, Oswego.

Tuesday, February 5. Morning session, 10:00 o'clock.

Music; prayer, Rev. S. W. Meek, Yorkville; Secretary's report, Alonzo Stansel, Yorkville; address, Keeping a Flock of Breeding Ewes for Profit, H. D. Hughes, Antioch; discussion; music.

Afternoon session, 1:30 o'clock.

Music; paper, Small Fruits and How to Grow Them, A. A. Young, Yorkville; discussion; address, Good Roads and How to Get Them, Howard Gross, U. S. Road Expert, Chicago; discussion; reading, "The Squire's Rooster," Gerald H. Pearce, Na-au-say; address, Potato Culture, L. S. Spencer, Tolono; discussion; music; discussion.

Evening session, 7:30 o'clock.

Music; select reading, Miss Anna Robinson, Specie Grove; vocal solo, Miss Mary Skelly, Bristol; violin solo, Miss Jessie Lelfheit, Waterman; address, Weather Forecasting, Charles E. Linney, Observer, Weather Bureau, Chicago; discussion.

Wednesday, February 6. Morning session, 10:00 o'clock.

Music; address, Waste Places on the Farm, L. S. Spencer, Tolono; discussion; address, The Silo and Its Use, H. D. Huges, Antioch; discussion; music.

Afternoon session, 1:30 o'clock.

Music; address, Crossing and Breeding Up of Seed Corn for Quality and Yield, W. H. Stodard, Carlville; discussion; readings, 1, "My Dad and Me," 2, "Snakes," Harlan Grimwood, Bristol; election of officers; address, Swine Diseases, W. F. Weese, Ottawa; discussion; music.

Evening session, 7:30 o'clock.

Music; reading, "The Toboggan Slide," Miss Winifred Rollins, Glen'Ellyn; address, The Past and Present, H. G. Gabel, M. D., Aurora; music; Indian club exercise, Miss Winifred Rollins; lecture, Genius in Sunshine and Shadow, Rev. E. W. Oneal, Aurora; music.

Average daily attendance, 550; cost of institute, \$122.45.

Officers elected for the ensuing year—President, A. E. Myers, Millbrook; Secretary and Treasurer, Alonzo Stansel, Yorkville.

KNOX COUNTY FARMERS' INSTITUTE,

Held at Galesburg, January 9, 10, and 11, 1901.

Officers—President, Arthur E. Hinckle, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, H. M. Sisson, Galesburg.

Program—Wednesday morning, Jan. 9.

Music by Prof. Schroeder's orchestra; address of welcome, Hon. F. Carney, mayor; response, President A. E. Hinckley; appointment of committees; paper, The Confessions of a Reformed Hen Raiser, Hon. W. C. Calkins; address, Poultry, Rev. Lewis Springer.

Afternoon.

Music; paper, Breeding and Feeding Swine, Wm. Adcock; discussion; topic, Selection and Planting of Seeds: potatoes, Dr. Standish; corn, J. H. Coolidge; oats, L. W. Olson; wheat, J. S. Simpson; discussion.

Thursday morning, Jan. 10.

Music; prayer; address, Type and Quality in Farm Stock, Hon. A. P. Grant, Winchester; discussion; paper, Clover Culture, Henry Wallace, Des Moines; Good Roads, Hon. H. H. Gross, Dept. Agriculture; discussion.

Afternoon.

Music; address, Domestic Economy, Mrs. Kedzie, Peoria; discussion; paper, How Shall We Live, Miss Barlow, Bloomington.

Friday morning, January 11.

Music; prayer; address, Farm Homes, Hon. E. S. Fursman; discussion.

Afternoon.

Music; election of officers; resolutions; talk, What is the Matter with the Farmer, Hon. G. A. Lawrence.

Average daily attendance, 300; cost of institute, \$95.75.

Officers elected for the ensuing year—President, H. H. Clay, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, H. M. Sisson, Galesburg.

LAKE COUNTY FARMERS' INSTITUTE,

Held in the Town Hall, Libertyville, Thursday, Friday and Saturday, December 6, 7 and 8, 1900, and Seventh Congressional District Farmers' Institute at Millburn, Illinois, February 1 and 2, 1901.

H. D. Hughes, Antioch, director Seventh District.

Officers—President, Ralph Crittenden, Gurnee; secretary, J. J. Burke, Antioch; treasurer, H. B. Pierce, Antioch.

Program, Thursday, December 6. Morning session—10:00 o'clock.

Invocation; address of welcome; response, H. D. Hughes; The Sugar Beet in Illinois, Leon Hay, Kankakee, secretary Illinois Sugar Beet Growers' Association.

Afternoon session—1:00 o'clock.

Clover—Its Value on the Farm, Clayton C. Purvier, Sheffield; Hot Water Treatment of Oats for Smut, Harold Hughes, agricultural student, Urbana; Testing Vitality of Seeds, Earl A. White, agricultural student, Urbana.

Evening session—7:30 o'clock.

Work of the College of Agriculture, Eugene Davenport, dean of the Agricultural College of Illinois; Agricultural Education, F. M. Higgins, Ottawa; Education of the Farmer, Clayton C. Purvier, Sheffield.

Friday, December 7. Morning session—9:30 o'clock.

Invocation; reports of officers; election of officers; Live Stock Session, led by Prof. Eugene Davenport; Care and Feeding of Hogs for Market, Clayton C. Purvier.

Afternoon session—1:00 o'clock.

Domestic Science Session, led by Mrs. H. M. Dunlap, president Illinois Domestic Science League, Savoy.

The entire afternoon was given to the ladies for the discussion of problems pertaining to the home.

Evening session—7:30 o'clock.

Effect of Rural Influence on Moral Character, F. M. Higgins; Undeveloped Resources of Illinois, Leon Hay; Literary Program by Home Talent.

Saturday, December 8. Morning session—9:30 o'clock.

Corn Cultivation and Breeding, A. D. Shannel, B. S., assistant in farm crops, Agricultural College, Urbana; The Most Wonderful Plant, Leon Hay; Horticulture, H. B. Pierce, Antioch.

Afternoon session—1:00 o'clock.

Good Roads, Howard H. Gross, U. S. Dept. of Agriculture; Good Roads and Their Management, Leon Hay.

Friday, February 1. Morning session—9:00 o'clock.

Music; invocation, pastor; address of welcome, G. B. Stevens, Millburn; response, H. D. Hughes, Antioch; music; Short-Horn Cattle, J. H. Thain, Millburn; Horses, B. W. Ames, Hickory; Good Roads, Howard H. Gross, Chicago.

Afternoon session—1:00 o'clock.

Music; Hogs, H. N. Maxham, Diamond Lake; Birds in their Relation to Agriculture, Ellen D. Farwell, Lake Forrest; address, W. B. Lewin, Russell; Bulbs, Flowers, Fruit, H. B. Pierce, Antioch.

Evening session—7:00 o'clock.

Music; recitation: What Inducements Does Farm Life Hold Out for the Young People Today, Hon. A. S. Collins, Harvard; music: solo; recitation; music; address; solo; recitation; music.

Saturday, February 2. Morning session—9:00 o'clock.

Music. Invocation, pastor; Poultry, H. N. Maxham; Care of Milk From Cow to Creamery, Elmer Cannon, Millburn; Ensilage, Experience with Silo, Frank T. Holt, Ranney, Wis.; Suet in Oats, Prof. A. D. Shamel, Illinois Agricultural College, Urbana.

Afternoon session—1:00 o'clock.

The Coming Farmer; Grade, Character, Results, A. S. Collins; Corn Breeding; Selection, Cultivation, A. D. Shamel.

Average daily attendance at Libertyville, 60. Cost, \$105.65.

Average daily attendance at Millburn, 200. Cost, \$52.55.

Officers elected for the ensuing year—President, Ralph Crittenden, Gurnee; secretary, J. J. Burke, Antioch; treasurer, H. B. Pierce, Antioch.



J. J. Burke, Antioch, Ill.

LASALLE COUNTY FARMERS' INSTITUTE.

Held at Timmin's Hall, Seneca, Ill., June 21 and 22, 1901.

Officers—President, D. M. Terry, Freedom; secretary and treasurer, Mrs. L. G. Chapman, Freedom.

Program, Friday, June 21. Afternoon session—1:30 o'clock.

Address of welcome, Mayor Foley; response, D. M. Terry, county president; music; prayer; Our Agricultural Department, Dr. W. F. Weese; discussion; Horses, W. E. Prichard.

Evening session—7:30 o'clock.

Quartette; recitation, Miss Clara Killelea; Country Schools, Prof. J. O. Leslie, Ottawa High School; song, Miss Hogan; discussion; Our Farmers' Girls, Mrs. L. G. Chapman.

Saturday, June 22. Morning session—9:00 o'clock.

Practical Corn Judging, Prof. A. D. Shamel, University of Illinois; piano solo, Clara Killelea; Corn Cultivation, Prof. A. D. Shamel; discussion; Horticulture, Arthur W. Bryant, director of 11th Congressional District; cornet solo, Joseph Hogan.

Afternoon session—1:30 o'clock.

Domestic Science, Mrs. Nellie Kedzie, Bradley Polytechnic Institute, Peoria; song, A. R. Lettsome; Aim and Object of the Farmer's Institute, F. M. Higgins; recitation, Miss Dow. Average daily attendance, 225. Cost of Institute, \$62.24.

Officers elected for the ensuing year—President, D. M. Terry, Freedom; secretary and treasurer, F. M. Higgins, Ottawa.

LAWRENCE COUNTY FARMERS' INSTITUTE,

Held at Lawrenceville December 11, 12 and 13, 1900.

Officers—President, Robert Kingsbury, Pinkstaff; secretary, W. E. Neal, Bridgeport.

Program, Tuesday, December 11—Afternoon session.

Address, President Robert Kingsbury, Pinkstaff; Corn Culture, J. E. Dollahan and Perry King; Tiling, J. C. Barr; discussion.

Wednesday, December 12. Morning session.

Domestic Science Session, Domestic Help, Treatment and Training, Miss Mollie Benfel; Music in the Home, Mrs. Anna White; discussion.

Afternoon session.

Farmers' Institutes, Mrs. J. R. King; Buttermaking, Mrs. James A. Seed; Culture of Farmers' Children, Mrs. Southworth, Allerton, Ill.; discussion.

Thursday, December 13. Morning session.

The Farmer's Boy, J. M. Holingsworth, Ridge Farm, Ill.; Profit on the Farm, O. H. Barnes; The Country School, County Superintendent Hostetler, Lawrenceville; discussion.

Afternoon session.

The Farmer and His Tenant, David Hinshire; The Most Profitable Stock to Raise, James M. Collison and W. R. Kingsbury; discussion; election of officers.

Average daily attendance, 300. Cost of Institute, \$61.15.

Officers elected for the ensuing year—President, W. E. Neal, Bridgeport; secretary and treasurer, Willard D. Barr, Lawrenceville.

LEE COUNTY FARMERS' INSTITUTE,

Held in the Opera House, Amboy, Ill., January 8th and 9th, 1901.

Officers—President, J. L. Hartwell, Dixon. Vice-Presidents, W. C. Yenrick, Albion Rogers, Henry Gehant, Wm. Moffatt, N. Lee Stary, Arthur McKeel, Collins Dysart, Henry Gross, B. J. Ackland, Gardner Thompson, Roy E. Swigert, D. E. Raymond, Thos. L. Phillips, A. W. Burnham, Henry Hillison, Sherman Shaw, Henry B. Cobb, Carl T. Yetter, Wm. Anderson, Geo. Ransom, Chas. Welty, J. Hall; Secretary, Charles Hey, Dixon; Treasurer, Warren Badger, Amboy.

Program—Tuesday, January 8. Afternoon session, 1:30 o'clock.

Business and report of secretary and treasurer; appointment of committees; address, President J. L. Hartwell; Clover, C. C. Pervier, Sheffield; Potatoes, Abe Ackert, Harmon; Roads, H. T. Thompson, Huntley.

Evening session, 8:00 o'clock.

Music; prize essay; vocal solo; paper, Is There Anything in Farm Life to Develop Poetic and Literary Taste, Carrie L. Swigart; recitation; rent, Henry Wallace, editor Wallace Farmer, Des Moines, Iowa.

Wednesday, January 9. Morning session, 10:00 o'clock.

Feeding Cattle, general topic; Seed Corn, W. C. Yerrick, Ashton; Rotation of Crops, Geo. McKerrow, Madison, Wis., Supt. of Farmers' Institutes of Wisconsin.

Afternoon session, 1:30 o'clock.

Music; election of officers; Fruit on the Farm, J. L. Hartwell, Dixon; Sheep, Geo. McKerrow, Madison, Wis.

Evening session.

Music; prize essay; Hired Girl, Mrs. Jas. Thompson, Dixon; Rural Schools, F. W. Parker, Chicago.

Average daily attendance, 400; cost of institute, \$81.80.

Officers elected for the ensuing year—President J. L. Hartwell, Dixon; Secretary and Treasurer, Charles Hey, Dixon, Ill.



Chas. Hey, Dixon, Ill.

LIVINGSTON COUNTY FARMERS' INSTITUTE,

Held at Fairbury, February 12 and 13, 1901.

Officers—President, J. W. McDowell, Fairbury; Secretary, A. D. Westervelt, Fairbury; Treasurer, F. Mortimer, Pontiac.

Program—Tuesday forenoon, 10:00 o'clock, organizing and placing exhibits.

Tuesday afternoon, 2:00 o'clock.

Welcome address, Mayor Barnes; response, Robert Henning; song by pupils of South Side school under direction of Mrs. Enslow; address, Profits and Pleasures of Poultry Raising, Miller Purvis, Chicago; recitation, Reese Veatch.

Tuesday evening, 8:00 o'clock.

Music, Burch's orchestra; song, "Old Farmer Slow," Farmer Sextette; Greeting, George Marvel; address, Progress of Agriculture in XIX Century, M. C. Eignus; music, Orchestra; song, "Tom, Tom, the Piper's Son," Farmer Sextette; music, Orchestra.

Wednesday forenoon, 9:30 o'clock.

Fruit on the Farm, J. L. Hartwell, Dixon, Ill.; Corn Breeding, A. D. Shamel, University of Champaign; judging of grains and butter and placing premiums on poultry.

Wednesday afternoon, 2:00 o'clock.

Address, G. A. Wilmarth, President State Farmers' Institute; song by pupils of North Side school under direction of Mrs. Finley; recitation, Miss Maude Powell; address, Farm Homes, E. S. Fursman, El Paso, Illinois; auction of premium grain and butter.

Average daily attendance, 600; cost of institute, \$95.75.

President, C. R. Tombaugh, Pontiac; Secretary, W. S. Perry, Pontiac; Treasurer, F. Mortimer, Pontiac.

Had exhibits of farm and domestic products.

LOGAN COUNTY FARMERS' INSTITUTE,

Held in the City Hall, Lincoln, Ill., Tuesday, Wednesday and Thursday, December 11, 12 and 13, 1900.

Officers—President, Hon. J. T. Foster, Elkhart; vice-president, William H. Evans, Lincoln; treasurer, John A. Critchfield, Broadwell; secretary, J. W. Jones, Lincoln.

Township Vice-Presidents—Aetna, James Armstrong, Beason; Atlanta, Joseph W. Hoblit, Atlanta; Broadwell, John Cline, Broadwell; Chester, H. P. Purviance, Lincoln; Corwin, J. T. Galford, Elkhart; East Lincoln, J. H. Larison, Lincoln; Eminence, W. B. Stroud, Jr., Atlanta; Elkhart, Albert Oglesby, Broadwell; Hurlbut, Hardy Council, Elkhart; Lake Fork, Marshall Crane, Lake Fork; Laenna, George Yocum, Latham; Mt. Pulaski, C. T. Anderson, Mt. Pulaski; Oran, J. B. Hanger, Atlanta; Orvil, James W. Houser, Emden; Sheridan, A. M. Caldwell, New Holland; Prairie Creek, William Lowe, Harness; West Lincoln, William Crain, Lincoln.

Program, Tuesday, December 11. Morning session—10:00 o'clock.

Music—selected: prayer, Rev. W. H. McGhee, Lincoln; address of welcome, Senator L. B. Stringer, Lincoln; response, Wm. H. Evans, vice-president, Lincoln; president's address, Hon. J. T. Foster, Elkhart; secretary's report, J. W. Jones, Lincoln; treasurer's report, J. A. Critchfield, Broadwell.

Afternoon session—1:00 o'clock.

Woman's session, Mrs. H. P. Purviance, president of the Logan County Butter Makers' Association, presiding.

Music, mixed quartette, Beason; address, The Care of Milk on the Farm, Prof. Oscar Erf, B. S., Urbana; discussion; music—vocal solo, Mrs. Mable Lampe; New Holland; address, Cooking, A Well Arranged Kitchen, Mrs. E. M. Coffman, Mechanicsburg; music—vocal duet, Mrs. Lampe and Mrs. B. S. Talbott, New Holland; the question box; address, Farmers' Wives and Daughters, Miss Lina Brennenman, Minier; music—vocal solo, Miss Lida Parks, Lincoln; reading—selected, Mrs. Josephene Keys, Beason; music, Beason Glee Club.

Evening session.

Under the auspices of the public schools of Logan county, Prof. E. P. Gram, superintendent.

Opening address, Hon. J. T. Foster; music, Gardner-Keys Quartette, Beason; Why Farmers Should Be Educated Men, Miss Lela Row, Buchanan School; Decorating the Farm Home, Miss Ruth Keys, Independence School; The Man with the Hoe and the Makers' Image, Leigh Lucas, Scroggin School; recitation, "Farmer John," Miss Maud Woland, Lone Tree School; music—violin solo, James L. Brennan, Broadwell; Labor, Miss Maurine Humphreys, Buchanan School; American Man with a Hoe, Kelsey Anderson, Hamilton School; recitation, Miss Ruth Keys, Beason; reading, Richard Caldwell, New Holland; music, Gardner-Keys Glee Club.

Wednesday, December 12. Morning session—10:00 o'clock.

Music—selected; address, Good Roads, W. B. Stroud, Jr., Atlanta; discussion; address, The Profitable Horse, C. R. Taylor, Williamsville; discussion; music—vocal solo, William Gardner, Beason; address, Rotation of Crops, Hon. A. B. Hostetter, secretary Illinois State Farmers' Institute, Springfield, Ill.; discussion.

Afternoon session—1:00 o'clock.

Music, Glee Club, Beason; address, Soil Fertility, What It Is, How Lost and How Retained, Prof. P. G. Holden, Pekin; music—selected; address, Telephone as a Means of Bringing the Farmer and City Into Closer Relations, S. S. Tanner, Minier; discussion, Robert Parks, Lincoln; C. T. Anderson, Mt. Pulaski; W. B. Curry, Eminence; Harry Buckles, Lake Fork; James W. Houser, Emden and others; music—selected; address, Corn Breeding, Prof. A. D. Shamel, Urbana.

Thursday, December 13. Morning session—10:00 o'clock.

Music, Glee Club, Beason; report of judges, Raising Hogs For Market, Wm. H. Rowe, Jacksonville; discussion; music—selected; address, Live Stock Judging; Its Place in Agricultural Education and How it is Taught at the College of Agriculture, University of Illinois, (Charts Used) Prof. W. J. Kennedy, Urbana; discussion; music—selected.

Afternoon session 1:00 o'clock.

Music; election of officers for the ensuing year; address, Cattle Breeding, L. H. Kerrick, Bloomington; discussion; Observations at the International Live Stock Show, 1900 Chicago, J. T. Foster and other delegates; music, mixed quartette; address, Farmer Boys Who Have Become Famous, and Why, W. R. Jinnett, Atlanta; adjournment.

Average daily attendance, 300. Cost of Institute, \$36.15.

Officers elected for the ensuing year—President, J. T. Foster, Elkhart; secretary, J. W. Jones, Lincoln; treasurer, J. A. Critchfield, Broadwell.

Had extensive exhibits of farm and domestic products.

McDONOUGH COUNTY FARMERS' INSTITUTE,

Held at Good Hope, Illinois, Tuesday and Wednesday, December 11 and 12, 1900.

Officers—President, A. R. Stickle, Good Hope; Secretary, Fred G. Miner, Adair; Treasurer, W. B. Webb, Good Hope.

Program—Tuesday, December 11. Morning session, 9:30 o'clock.

Invocation; music; Report of the year's work, A. R. Stickle, Good Hope; How I Raise Corn, Ed. Willis, Good Hope.

Afternoon session, 1:30 o'clock.

Music; How to Raise Hogs for the Market, Frank Herzog, Blandinsville; Swine Husbandry, Hon. G. A. Willmarth, Seneca, President Illinois Farmers' Institute.

Evening session, 7:00 o'clock.

Music; recitation, Gladis Greggs, Sorgum; Agricultural Education, Hon. G. A. Willmarth, Seneca, President Illinois Farmers' Institute.

Wednesday, December 12. Morning session, 9:30 o'clock.

Invocation; music; Sheep Raising, W. E. Spicer, Bushnell; Care of Fruit Trees—Sprayed vs. Not Sprayed, Mrs. M. McElvain, Scottsburg; election of officers.

Afternoon session, 1:30 o'clock. In charge of the McDonough County Domestic Science Association.

Music; Labor Saving Devices in the Home, Mrs. F. Spicer, Good Hope, and Mrs. G. W. Stanley, Swan Creek; Home Duties of Girls, Mrs. Blanche Lindsey, Good Hope; Entertaining Unexpected Company, Mrs. T. Hamilton, Good Hope; Entertaining Expected Company, Mrs. S. F. Kennedy, Good Hope; Fruit Canning, Mrs. Charles Arbogast, Scottsburg; reports from the ladies attending the School of Domestic Science held in Springfield, Ill.

Second meeting held at Good Hope, May 28 and 29, 1901.

Program—Tuesday, May 28, 10:00 a. m.

Music followed by prayer, Rev. N. J. Brown; address of welcome, Rev. J. B. Carbaugh; response, S. A. Merriam; Canning Small Fruits, Mrs. M. C. Pollock, Sorgum; recitation.

Afternoon session, 1:30 o'clock.

Music; Sugar Beet Culture, P. G. Holden, Pekin, Ill.; Child Life on the Farm, Mrs. S. A. Merriam; question box; music.

Wednesday, May 29, 10:00 a. m.

Music; Cross Breeding of Hogs, F. L. Hankins, Sciota; recitation; Artificial Incubation, Euclid N. Cobb, Monmouth; music.

Afternoon session, 1:30 o'clock.

Music; Silos and Ensilage, E. N. Cobb, Monmouth; recitation, Miss Bessie McElvain; Orchards and Small Fruits, E. J. Wetzel, Good Hope; recitation, C. L. Merriam; music.

Average daily attendance first meeting, 100; cost of institute, \$46.45. Average daily attendance second meeting, 100; cost of institute, \$18.25.

Officers elected for the ensuing year—President, A. R. Stickle, Good Hope; Secretary, W. B. Webb, Good Hope; Treasurer, S. A. Merriam, Good Hope.

McHENRY COUNTY FARMERS' INSTITUTE,

Held in M. E. Church at Nunda, Ill., Wednesday and Thursday, January 9 and 10, 1901, and at Hebron, Ill., Thursday and Friday, January 31, February 1, 1901.

Officers—President, Geo. A. Hunt, Greenwood; Vice-President, E. S. Smith, Alden; Secretary, M. Zimpelmann, Marengo; Asst. Secretary, J. H. Turner, Hebron; Treasurer, H. T. Thompson, Marengo.

Program—Wednesday, Jan. 9, 1901. Morning session, 9:30 o'clock.

Music, America, by the audience; prayer; address of welcome, Dr. C. C. Watson, Mayor; response, Fred L. Hatch, Spring Grove, President McHenry Co. Agricultural Board; The Future of the Farmer, A. S. Collins, Harvard; A Few of My Mistakes, Miller Purvis, Chicago; music; How I Became a Successful Farmer, Mrs. Adda F. Howie, Elm Grove, Wis.

Afternoon session, 1:30 o'clock.

Music; The Value of Improved Live Stock, Fred L. Hatch, Spring Grove; The Farmer as a Citizen, W. E. Wire, Hebron, County Superintendent of Schools; Poultry for Profit, Miller Purvis, Chicago; Sixty Years Behind the Plow, T. J. VanMatre, Fayette, Wis.

Evening session, 7:30 o'clock. Ladies session, conducted by Mrs. H. J. Merrill, Harvard.

Piano solo, Helen Sughrua; dairy duet, children; prayer, Mrs. I. N. Powell; vocal solo, Agnes Irwin; reading, Mrs. Della Earl; vocal solo, Esther Sargeant; violin solo, Alice Thompson; address, Illinois Association of Domestic Science, Mrs. Jane Carter, Champaign, president of the association; vocal solo, Mrs. C. E. Dickinson; reading, Frances Pollette; vocal solo, Madame DeMerious Berry; piano solo, Helen E. Roberts.

Thursday, Jan. 10, 1901. Morning session, 9:30 o'clock.

Music; prayer; Profitable Pork Production, T. J. VanMatre; The Work of the Agricultural College, Prof. E. Davenport, Dean Illinois College of Agriculture; music; The Ethical Side of Farm Life, A. S. Collins.

Afternoon session, 1:30 o'clock.

Music; Essentials in Stock Raising, Prof. E. Davenport, Urbana; Soil Exhaustion and How to Prevent It, Miller Purvis, Chicago; Some Hints on Marketing Dairy Products, Mrs. Adda F. Howie, Elm Grove, Wis.

Evening session, 7:30 o'clock.

Music; Training Horses for Driving or Work, Prof. E. Davenport, Urbana; A Talk to Boys and Girls, H. T. Thompson, Marengo; What Inducements Does the Farm Hold Out to the Young People of Today? A. S. Collins, Harvard; Things Are Not as They Used to Be, T. J. Van Matre, Fayette, Wis.; report of Committee on Resolutions.

Report of second meeting, held at Hebron, Ill.

Program—Thursday, Jan. 31, 1901. Morning session, 9:30 o'clock.

Music, The Red, White and Blue, by audience; prayer; address of welcome, Frank Rowe, President Village Board; response, H. C. Mead, McHenry, Ill.; The Education of the Farmer, Clayton C. Pervier, Sheffield, Ill.; music; Construction of Silos and Handling of Silage, Prof. F. H. King, Instructor in Agriculture, Wisconsin College of Agriculture; The Proper Types of Animals to Breed, Prof. W. J. Kennedy, Instructor in Animal Husbandry, Illinois College of Agriculture

Afternoon session, 1:30 o'clock.

Instrumental music; The Care of Milk from the Cow to the Weigh Can, M. Long, Greenwood, Ill.; Ventilation of Farm Buildings, Prof. F. H. King, Madison, Wis.; music; One Way to Develop a Dairy Cow, Mrs. Adda F. Howie, Elm Grove, Wis.; music; Farming as a Progressive Science, A. S. Collins, Harvard, Ill.

Evening session, 7:30 o'clock.

Instrumental music; prayer; The Best, Rev. J. B. Robinson, Pastor M. E. Church, Hebron; music; Dairy Farming as an Employment for Women, Mrs. Adda F. Howie, Elm Grove, Wis.; music; A Talk to Boys and Girls, H. T. Thompson, Marengo, Ill.; music; American Citizenship, T. J. Van Matre, Fayette, Wis.

Friday, Feb. 1, 1901. Morning session, 9:30 o'clock.

Instrumental music; prayer; Care and Feeding of Hogs for Market, Clayton C. Pervier, Sheffield, Ill.; Common Sense in Feeding, Prof. W. J. Kennedy, Urbana, Ill.; music; Leaks and How to Stop Them, A. S. Collins, Harvard, Ill.; report of Farmers' Picnic Committee and Committee on Permanent Organization.

Afternoon session, 1:30 o'clock.

Instrumental music; election of officers and delegates; Clover, Its Value as a Feed and Fertilizer, Clayton C. Pervier, Sheffield, Ill.; music; How to Handle a Dairy Herd for Profit, Mrs. Adda F. Howie, Elm Grove, Wis.; Some of the Benefits to be Derived from an Agricultural Education, Prof. W. J. Kennedy, Urbana, Ill.; music; report of Committee on Resolutions.

Evening session, 7:30 o'clock. Ladies' session, conducted by Mrs. H. J. Merrill, Harvard, Ill.

Orchestra; piano solo, Miss J. Ida Groesbeck; prayer, Mrs. W. H. Groesbeck; vocal solo, Miss Beatrice Gaye; reading, Mrs. Della Earle; duet, Misses Beatrice and Beulah Gaye; vocal solo, Miss Laura Wright; duet, Dean Manor and Junius Earle; address, Teaching Domestic Economy, Mrs. Nellie S. Kedzie, Dean of Bradley Polytechnic Institute, Peoria, Ill.; vocal solo, Mrs. Hattie Hatch; music, Harvard Quartette.

Average daily attendance at the Nunda meeting, 350; cost, \$32.58. Average daily attendance at the Hebron meeting, 450; cost, \$194.70.

Officers elected for the ensuing year—President, H. T. Thompson, Marengo; Secretary, J. F. Turner, Hebron; Treasurer, F. C. Wells, Harvard.

MCLEAN COUNTY FARMERS' INSTITUTE,

Held in Coliseum Building, Bloomington, Ill., Tuesday, Wednesday and Thursday, January 15, 16 and 17, 1901.

Officers—President, F. D. Funk, Shirley; secretary, J. M. Anthony, Bloomington; treasurer, J. F. Moore, Bloomington.

Executive Committee—Frank Benjamin, Bloomington; John M. Yates, McLean; S. E. Lantz, Carlock; W. A. Orendorf, Bloomington; F. A. Eyestone, Bloomington; J. F. Morisey, Padua; C. B. Goodrich, Holden.

Program Committee—M. P. Lantz, Carlock; L. H. Kerrick, Bloomington; Miss Sallie Anthony, Bloomington; Mrs. Jennie Barlow, Bloomington; S. Noble King, Bloomington; E. B. Mitchel, Danvers; Mrs. S. Noble King, Bloomington, F. H. Funk, Bloomington; F. W. Benjamin, Bloomington.

Program, Tuesday, January 15. Morning session—9:30 o'clock. Young People's Session:

Music, Down's Quartette; prayer; march—Forming the Word Welcome, Pupils of District No. 3, Normal Township; president's address, E. D. Funk, Shirley; paper, Profits in Poultry; report of Pig Feeding Contest; Domestic Science songs, Pupils of District No. 3, Normal Township; address to the Young People, L. H. Kerrick, Bloomington; Children at Home—Pantomime, Pupils of District No. 7, Bloomington Township.

Afternoon session—1:30 o'clock.

Music—vocal solo, Miss Edna McFadden; Corn—Its Cultivation, George Bohrer, Kerrick; reports of Corn Growing Contest; Corn—Its Culture, Seed Breeding and Corn Products, Prof. A. Shamel, Champaign.

Evening session—7:30 o'clock.

Piano solo—selected, Miss Lorena Craig, Heyworth; music—"Sing Me a Song of the South," Guy W. Skinner-Hudson, music by J. M. Casey; address, The Relation of Landlord and Tenant, Henry Wallace, Des Moines, Iowa.

Wednesday, January 16. Morning session—9:30 o'clock.

Piano solo—selected, Miss Etta Moore, Kerrick; prayer; music—vocal solo—For "Old Time's Sake," Miss Sarah M. Price, music by Chas. K. Harris; address, How to Maintain the Fertility of the Soil, Capt. S. Noble King, Bloomington; open discussion by audience.

Afternoon session—2:00 o'clock.

Domestic Science session, Mrs. S. Noble King, presiding.

Music—vocal solo—selected, Miss Lottie Durgey; prize essay, Nutrition; prize essay, Advantages of Country Living; report from Cooking School, Miss Effie V. Anthony, Bloomington; address, How to Simplify Living, Mrs. Sarah Tyson Rohrer, principal of Philadelphia Cooking School.

Evening session—7:30 o'clock.

Music—The Limit (Medley) Overture, arranged by W. H. Mackie, Price's Orchestra; address, Partnership on the Farm, Miss Jennie Barlow, Bloomington; vocal solo—selected, Miss Edith Stubblefield, Normal; address, Education of Prospective Farmers, Frank H. Hall, Jacksonville.

Thursday, January 17. Morning session—9:30 o'clock.

Music—Saxophone solo—selected, George R. Price; prayer; address, Type and Quality of Farm Stock (illustrated), Hon. A. P. Grout, Winchester.

Afternoon session—1:30 o'clock.

Music—piano solo, Bloomington Waltz, composed by Scott Price, by Scott Price; election of officers; resolutions; sale of exhibits.

Average daily attendance, 1,000. Cost of Institute, \$440.92.

Officers elected for the ensuing year—President, M. K. Lantz, Carlock; secretary, J. M. Anthony, Bloomington; treasurer, J. F. Moore, Bloomington.

Had an extensive exhibit of farm and domestic products.

MACON COUNTY FARMERS' INSTITUTE,

Held at Decatur January 29, 30 and 31, 1901.

Officers—President, W. H. Bean, Blue Mound; secretary, C. A. Thrift, Decatur, R. D. No. 1; treasurer, C. H. Scott, Mt. Zion,

Program was not reported.

Average daily attendance, 500. Cost of Institute, \$96.51.

Officers elected for the ensuing year—President, William H. Bean, Blue Mound; secretary, C. A. Thrift, Decatur, R. D. No. 1; treasurer, C. H. Scott, Mt. Zion.

Had an extensive exhibit of farm and domestic products.

MACOUPIN COUNTY FARMERS' INSTITUTE,

Held at Carlinville, December 11 and 12, 1900.

Officers—President, W. B. Otwell, Carlinville; Secretary, W. H. Stoddard, Carlinville; Treasurer, Elsworth Chiles, Carlinville.

Program—Tuesday, 1:00 o'clock p. m.

Prayer, Rev. Smith; Sheep Industry, Hon. Henry Wallace, Des Moines, Iowa; Importance of Pure Seed Corn and How to Secure It, Prof. A. D. Shamel, Champaign, Ill.

Evening session—7:00 o'clock.

Recitation, Beatrice Smith; Quartette, section, Messrs. Ross, Barcus, Alexander, Collins; vocal solo, Mr. Al. Westermier, Carlinville, Ill.; Rents, Hon. Henry Wallace, Des Moines, Iowa; selections from James Whitcomb Riley, Prof. Challacombe.

Wednesday, 9:00 o'clock a. m.

Bees, Clinton Davis, Carlinville, Ill.; Succession of Green Crops for Summer Feeding, L. A. Spies, St. Jacobs, Ill.; short talks on How to Improve the Land, Macoupin County farmers; Selecting Seed Corn for Planting and Exhibition, W. H. Stevenson, Jacksonville, Ill.

Wednesday afternoon, 1:30 o'clock.

By Way of Contrast, Mrs. L. B. Corbin, Carlinville, Ill.; Feeding and Grazing Cattle for Profit, John G. Imboden, Decatur, Ill.; Short Talks and How to Make the Farm Pay, by Macoupin County farmers.

Evening session, 7:30 o'clock.

Male quartette; recitation, Miss Olive Wilson, Carlinville, Ill.; vocal solo, Miss Lucy Miners, Carrollton, Ill.; address, Hon. Hugh A. Orchard, Roodhouse, Ill.; vocal solo, Mr. Al. Westermier, Carlinville, Ill.

Average daily attendance, 700; cost of institute, \$102.83.

Officers elected for the ensuing year—President, W. B. Otwell, Carlinville; Secretary, W. H. Stoddard, Carlinville; Treasurer, Elsworth Chiles, Carlinville.



W. H. Stoddard, Carlinville, Ill.

MADISON COUNTY FARMERS' INSTITUTE,

Held with the 18th Congressional District Institute, at Alton, October 16, 17, 18 and 19, 1900.

Officers—President, L. A. Spies, St. Jacobs; Secretary and Treasurer, Lee S. Dorsey, Moro. Director 18th District, E. W. Burroughs, Edwardsville.

Program—Tuesday evening, Oct. 16.

Music; prayer; address of welcome, Hon. A. W. Young, Mayor of Alton; response, Edward Grimes, Raymond; recitation; president's address, L. A. Spies; music; address, Work and Mission of the Farmers' Institute, by G. A. Willmarth, Seneca, Ill.; recitation; music.



Lee S. Dorsey, Moro, Ill.

ton; address, Mrs. Joseph Carter; Demonstrations of a Hygienic Breakfast, Misses Penwell and Robinson.

Afternoon session, 1:30 o'clock.

Music; prayer; Stock Breeding, a general discussion led by Prof. E. Davenport, Dean U. of I.; Breeding and Management of Hogs, Hon. G. A. Willmarth; Curing Hog Cholera, Dr. J. H. Snoddy; Feeding Hogs, Prof. Davenport; discussion.

Evening session, 7:30 o'clock.

Music; How to Make the Old Farm Pay, Col. W. H. Fulkerson, Jerseyville; recitation; Cultivation of Apple Orchards, Prof. J. C. Whitten, Experiment Station, Columbia, Mo.; music; A Farmer, A Citizen, Hon. Jos. Carter, Champaign; recitation; music.

Friday, October 19. Morning session, 9:30 o'clock.

Music; prayer; Fruit Culture, Col. W. A. Young, Butler, Vice-President State Board of Agriculture; Growing and Marketing Berries and Other Fruits, C. M. Sargent, Windsor; Spraying, Prof. J. C. Whitten; discussion.

Afternoon session, 1:30 o'clock.

Music; reports of committees; election of officers; Small Fruits, Judge Samuel Miller, Vice President Missouri State Horticultural Society; discussion.

Average daily attendance, 1,400; cost of institute, \$166.97.

Officers elected for the ensuing year—President L. A. Spies, St. Jacobs; Secretary and Treasurer, Lee S. Dorsey, Moro.

Had a regular fair in connection with the meeting.

Wednesday morning, Oct. 17, 9:30 o'clock.

Music; prayer; reports of delegates to State Institute, E. W. Burroughs and Frank Troeckler; reports of officers; appointment of committees; address, Farm Telephones and Rural Free Mail Delivery, E. C. Richards, Hillsboro; discussion; address, Up-to-Date Potato Culture, L. S. Spencer, Tolono.

Wednesday afternoon, 1:30 o'clock.

Music; topic, The Illinois Experimental Station; addresses by two students from the Eighteenth Congressional District; address, Crops to Build up Soil, Clarence Dorsey; address, Robert Bonnell; discussion; Corn, Hon. E. S. Fursman, El Paso, President Illinois Corn Growers' Association.

Wednesday evening, 7:30 o'clock. Conducted by the Madison County Domestic Science Association.

Music; address of welcome; response, Mrs. M. E. Challacombe, Hillsboro; recitation; address, Domestic Science, Mrs. Joseph Carter, Champaign, President of Illinois Association of Domestic Science; How to Give our Children a Practical Education, Mrs. W. H. Cartwright, Upper Alton; music; Better Methods in Our Homes, Miss Ann Robinson, Liberty Prairie; Art and Science of Cooking, Miss Hilda Penwell, Shelbyville; recitation, Miss Lou Hamilton; Farm Homes, Hon. E. S. Fursman; music.

Thursday, Oct. 18, 9:30 o'clock a. m. Domestic Science meeting.

Music; prayer; What the Housekeepers' Club of St. Jacobs Is Doing, Mrs. L. A. Spies; Township Organization, Mrs. M. E. Challacombe; recitation, Miss Lou Hamilton; music.

MARION COUNTY FARMERS' INSTITUTE.

Held at Salem, December 18 and 19, 1900.

Officers—President, A. V. Schermerhorn, Kinmundy; secretary, Lincoln Kell, Salem; treasurer, A. J. Harvey, Salem.

Program, Tuesday morning, December 18, 1900.

Address, President A. V. Schermerhorn, Kinmundy; The Farm and Village Garden, J. W. Ross, Alma.

Afternoon session.

Onion Culture, J. W. Ross, Alma; Rural Free Mail Delivery, A. Coffin, Brubaker; Stock Growing, Israel Mills, Clay City; Growing and Marketing Hay, William Morris, Kinmundy; Public Schools, J. E. Whitchurch, county superintendent schools, Salem; The Lack of Education and the Necessity for It, Col. N. B. Morriss, Odin.

Evening session.

Exercises by the public schools of Salem; The Red Top Seed Industry, M. N. Goodnow, Salem; Domestic Science, Mrs. S. Rose Carr, Lis.

Wednesday morning session.

Poultry Raising, Mrs. S. Rose Carr, Lis; Order in the Home, Mrs. J. M. Clark, Sparta; Soil Fertility and Corn Breeding, Prof. C. G. Hopkins, Urbana.

Afternoon session.

Live Problems in Orchardling, Prof. J. C. Blair, Urbana; recitation, John Galbraith, Carbondale; Horses, Col. J. F. Berry, Chicago.

Average daily attendance, 150. Cost of Institute, \$81.12.

Officers elected for the ensuing year—President, A. V. Schermerhorn, Kinmundy; secretary, F. C. Goodnow, Salem; treasurer, T. S. Marshall, Salem.

MARSHALL COUNTY FARMERS' INSTITUTE,

Held at Lacon November 30 and December 1, 1900.

Officers—President, C. J. Held, Lacon; secretary and treasurer, M. J. French, Wenona.

Program, Friday, November 30, 1900. Morning session—10:00 o'clock.

Prayer Rev. J. R. Stead; address of welcome, Mayor J. I. Thompson; response, Mr. C. F. Wright; paper, Must the Farmer and His Family do the Housework on the Farm? J. A. Williams, Henry; discussion, Horace Ramp and Jerry Trone, Lacon; paper, The Best and Cheapest Farm Fence, Milton Malone, LaRose; discussion, Charles Scott, Washburn; M. S. Miller and Truman Sperry, Lacon; paper, The Rural Schools of the Future, Ed R. Hannum; discussion, Prof. Daniel Burrows, Lacon; Matt Van Petten, Toluca; William Burr, Varna; report from State Institute, Elmer Quinn, Henry.

Afternoon session—1:30 o'clock.

Song, Lacon Quartet; address, The Education of the Farmer, G. A. Willmarth, Seneca, Ill., president Illinois State Farmers' Institute; discussion, Cyrus Root, La Prairie, and John Belsly, Lacon; paper, How to Get the Best Results From Raising Cattle on the Farm, Austin Garvin, Wenona; discussion, Richard Davidson and John Turnbull, La Prairie; Reuben Broadbuss, Varna; paper, Is Fruit Culture Profitable in Marshall County? C. E. Burt, Henry; discussion, Jacob Strawn, H. E. Rowley and Henry Crooks, Lacon; address, Waste on the Farm, Ira Cottingham, Eden, Ill.; discussion, E. V. Lane and Andrew Baechler, Lacon; William Riddell, Sparland; R. W. Hilt, Washburn.

Evening session—7:30 o'clock.

This session consisted of a school contest in charge of Superintendent M. M. Mallary.

Program, Saturday, December 1, 1900.

Prayer; paper, The Benefits of Farmers' Mutual Insurance Companies, A. L. Turner; discussion, Mrs. Fred Bayne, Lacon, and Harry Marshall, Sparta; paper, The Benefits of the Honey Bee to the Farmer, A. A. Coppin, Wenona; discussion, Walter Chalfant and C. M. Turner, Wenona; paper, How to Better Rural Schools, George Strawn, Lacon; discussion, L. K. Fuller, Varna, and Chas. F. Buck, Lacon.

Afternoon session.

Music; election of officers; paper, The Granary of America, Miss Nira Hickman, Varna; discussion, Miss Della Murch and Charles W. Casey, Lacon; paper, Roads and Communications, Miss Emma Strawn, Lacon; discussion, Miss Elsie Sperry and John Kanive, Lacon; B. M. Stoddard, Toluca; paper, The Profitable Way of Rearing and Management of the Horse on the Farm, J. W. Thornton, Magnolia; discussion, J. O. Whitefield and Robert Burgess, Wenona.

Average daily attendance, 300. Cost of Institute, \$109.20.

Officers elected for the ensuing year—President, C. J. Held, Lacon; secretary and treasurer, M. J. French, Wenona.

Had exhibits of farm and domestic products.

MASON COUNTY FARMERS' INSTITUTE.

Held at Franks' Opera House, Mason City, Ill., Wednesday and Thursday, October 3 and 4, 1900.

Officers—President, Chas. E. Himmel, Bishop, Ill.; secretary, Geo. H. Wiemer, Topeka, Ill.; treasurer, Mrs. Lenna Peine, Mason City, Ill.

Program, Wednesday, October 3. Morning session—9:00 o'clock. President Chas E. Himmel, presiding.

Male quartette, Howell, Morris, Mider and Mehan; invocation, Rev. A. S. Keye, Mason City; piano solo, Miss Ada Mehan, Mason City; address of welcome, Dr. Morris, Mason City; response, J. G. Spaits, Manito; Aplary, Henry Kile, Mason City; discussion, W. H. Pottorf, Thomas Hill, Mason City; piano duet, Mrs. Thompson and Mrs. Robertson.

Afternoon session—1:30 o'clock. S. F. Porter, presiding.

Piano solo, Miss Mary Greenway; Corn Cultivation and Breeding, Prof. A. D. Shamel, Champaign; discussion, J. J. Ainsworth, Mason City, G. G. Hopping, Havana; vocal solo, Miss Mable Mehan, Mason City; Management of Swine; Fred H. Rankin, Athens; discussion, B. D. Riner, S. B. Spear, Mason City; Public Warehouses and Warehouse Men, and Their Effect on the Prices of Grain, S. S. Tanner, Minier; discussion, O. C. Hartzell, W. T. Ainsworth, Mason City.

Evening session, 7:30 o'clock. J. G. Spaits, presiding.

Violin solo, Mrs. Howard, Elmore; Agricultural Education, G. A. Willmarth, Seneca; vocal solo, Prof. Everhart, Mason City; Work and Mission of the Farmers' Institute, A. B. Hostetter, Springfield; recitation, Miss Edna Phillips, Mason City; piano solo, Miss Leda Ellsberry, Mason City; recitation, Miss Myria Webb, Mason City.

Thursday, October 4. Morning session—9:00 o'clock. G. G. Hopping, presiding.

Invocation, Rev. G. W. Flagge, Mason City; piano solo, Miss Mable Ely, Mason City; Type and Quality of Cattle, A. P. Grout, Winchester; discussion, Garriet Herwig, Mason City; J. B. Barnes, Forest City; piano duet, Misses Chenoweth and McLemore; Horticulture, Henry Augustine, Normal; discussion, James Severns, Henry Kile, Mason City.

Afternoon session—1:30 o'clock.

Ladies' session, Mrs. Lenna Peine, presiding.

Baby show, in charge of Mrs. T. N. Sutton; vocal solo, Paul Enlows, Mason City; The Advantage Our Country Boys and Girls have to Develop a High Type of Manhood and Womanhood, Mrs. Martha Peet, Mason City; instrumental solo, Miss Leota Wakeman, Mason City; Higher Education for Woman as Regards Better Housekeeping and Homemaking, Miss Lina Brenneman, Minier; general discussion; Poultry; The Pocket Measure, Mrs. Paul Enlows, Mason City.

Evening session—7:30 o'clock. Supt. Mathew Bollan, presiding.

Male quartette, Castleberry, Enlew, Sigerson and Badger; address, Iron Sharpening Iron, Fannie Spaits, Manito; violin solo, Miss Myrtle Hess, Elmore; recitation, Miss Lina Brenneman, Minier; address, Educational Possibilities of the Farmer's Son, Supt. Everhart, Mason City; vocal solo, John Robertson; address, The Farmer and His Home, A. A. Caldwell, New Holland; piano trio, Tanerred Overture, Rosine, Miss Glendorr Hamilton, Mrs. J. H. Riggs and Mrs. T. C. Swing.

Average daily attendance, 500. Cost of Institute, \$35.95.

Officers elected for the ensuing year—President, Charles E. Himmel, Bishop; secretary, Geo. H. Wiemer, Topeka; treasurer, Lenna Peine, Mason City.

Had an exhibit of farm and domestic products.

MASSAC COUNTY FARMERS' INSTITUTE,

Held at Court House, Metropolis, Ill., November 15, 16 and 17, 1900.

Officers—Geo. C. Schneeman, President, Unionville, Ill.; Henry Westerman, Vice-President, Metropolis, Ill.; W. T. Cockerill, Secretary, Metropolis, Ill.; J. F. McCartney, Treasurer, Metropolis, Ill.

Program—First day, November 15. Morning session, 9:00 o'clock.

Prayer, W. T. Morris; address of welcome, D. W. Helms; response and address, President Geo. C. Schneeman; open Parliament on Farming in Massac County, led by Henry Goyert.

Afternoon session, 1:00 o'clock. Domestic Science Association, Metropolis, Ill.

Invocation, Rev. B. C. Swan; song, Metropolis Choral Club; Secretary's report of Organization, Miss Kate McCartney; remarks by the President, Mrs. A. Davison; paper, Fruit Canning, Mrs. Geo. Schneeman; paper, The Vegetable Garden, Miss Retta Devers; solo; Miss Maud Melton; paper, Mrs. C. P. Treat; paper, Literature in the Home, Mrs. Annie Cockerill; music; paper, Music, Miss Lizzie Forman; report from the Cooking School at Springfield, Miss Hope McCartney; paper, Unexpected Company, Mrs. Jennie Kidd; talk, Systematic Housekeeping, Mrs. J. M. Clark, Sparta.

4:30 p. m. Election of officers; song, America, by Association.

Second day, November 16. Morning session, 9:30 o'clock.

Sheep Breeding in Massac County, Lannes Oakes, Metropolis; Agriculture, A. D. Shamel, Agronomist at State University, Urbana.

Afternoon session—1:30 o'clock.

Truck Farming, E. R. Jinnette, Anna, Union county; Poultry, Mrs. Anna Slimpert, Metropolis; Horse Breeding, F. A. Armstrong, Massac county; discussion.

Third day, November 17. Morning session.

Agriculture and Horticulture in our Common Schools, R. Byrd Leeper, Unionville, Massac county; Breeding, Growing and Feeding of the Beef Steer, John G. Imboden, Decatur.

Afternoon session, 1:00 o'clock.

Miscellaneous business; Hogs, Andrew Davisson, Metropolis; Creating and Maintaining Fertility of the Soil, J. F. McCartney, Metropolis; discussion.

Average daily attendance not reported; cost of institute, \$75.00.

Officers elected for the ensuing year—President, Geo. C. Schneeman, Unionville; Secretary, W. T. Cockrill, Metropolis; Treasurer, J. F. McCartney, Metropolis.

MENARD COUNTY FARMERS' INSTITUTE,

And 17th Congressional District Farmers' Institute; at Court House, Petersburg, Ill., Tuesday and Wednesday, December 4 and 5, 1900. Charles F. Mills, Director 17th District.

Officers of Menard County Institute—H. A. Wood, President, Petersburg; J. H. Kincaid, Vice-President, Athens; I. H. Beard, Secretary, Petersburg; C. E. Smoot, Treasurer, Petersburg.

Committees—Executive: H. A. Wood, F. H. Whitney, J. S. Self, I. H. Beard. Program: Fred H. Rankin, I. H. Beard, Mrs. W. D. Masters, Mrs. Lizzie W. Waring, A. D. Alkire. Music: Ellis Whipp, Mrs. Lula Codington, Mrs. Ed. Bone. Reception: J. H. Kincaid, Gaines Greene, Fred H. Rankin.

Program—Tuesday, December 4. Morning session, 10:00 o'clock.

Music; prayer; report of Secretary, I. H. Beard; report of Treasurer, C. E. Smoot; address of welcome, C. E. Smoot; response, Col. Chas. F. Mills, Springfield; music; address, Co-operation Among Farmers, Col. Charles F. Mills, Springfield, Director 17th Congressional District; address, Mutual Farm Insurance, Hon. B. F. Workman, Auburn; discussion.

Afternoon session, 1:30 o'clock.

Music; The Twentieth Century Farmer, J. W. Hellstern, Atterberry; Taxation: Is the Burden Equally Borne, Rev. E. Worth, Athens; discussion; address, The Sugar Beet Industry in Illinois, Prof. P. G. Holden, Pekin, Supt. Agricultural Department, Illinois Sugar Refining Company; recitation, Mrs. R. B. Ruh, Tallula.

Evening session, 7:30 o'clock.

Music; The Farmer Boy; His Future Possibilities and How to Attain Them, Edgar Sampson; music; recitation, Beulah Wood; Some Changes we Need in our Public School System, Mrs. Lizzie Waring.

Wednesday, December 5. Morning session, 9:30 o'clock.

Music; prayer; Types of Live Stock, A. P. Grout, Winchester, President Illinois Live Stock Breeders' Association; Education From a Farmer's Standpoint, Wm. H. Bean, Blue Mound; music; recitation, Margaret Young, Athens.

Afternoon session—1:30 o'clock. Woman's session.

Music; song, America; prayer, Mrs. Tempe Smoot; president's address; recitation, Mrs. Minnie Smoot; music, solo, Effie Propst, Greenville; paper, Home Management on the Farm, Mrs. Jube Marbold, Greenville; recitation, Edith Masters; music, quartette; My Experience at the Cooking School, Mildred Johnson, Athens; round table talk; recitation, Hilda Carson, Athens; How to Cultivate Habits of Thrift and Obedience in our Girls and Boys, Mrs. Kate S. McLaughlin, Jacksonville; election of officers.

Evening session, 7:30 o'clock.

Music; recitation, Mae Ethel England, Fancy Prairie; address, When in the Pupil's School Life Should He Begin to Specialize? Prof. Frank H. Hall, Supt. Blind Asylum, Jacksonville; discussion.

Average daily attendance, 350. Cost of Institute, \$78.55.

Officers elected for the ensuing year—President, J. H. Kincaid, Athens; Secretary and Treasurer, W. E. Johnson, Athens.

MERCER COUNTY FARMERS' INSTITUTE AND 10TH CONGRESSIONAL DISTRICT INSTITUTE,

Held at Aledo, Ill., in the Presbyterian church, Wednesday, Thursday and Friday, January 23, 24 and 25, 1901.

J. H. Coolidge, Galesburg, director 10th District.

Officers—President, A. L. Woodhams, New Windsor; vice-president, J. F. Holmes, Aledo; secretary, H. Biglow, Aledo; treasurer, Elisha Lee, Hamlet.

Program, Wednesday, January 23. Morning session—10:00 o'clock.

Music; prayer, Dr. W. S. Davis; song—America; address of welcome, Mayor M. G. Reynolds; response, President of County Institute A. L. Woodhams; introductory remarks by President of Domestic Science Association, Mrs. T. A. Vernon; report of secretary; music; address, Domestic Help, Mrs. W. A. Lorimer; discussion; election of officers; adjournment.

Afternoon session, 2:00 o'clock.

Music; Partnership on the Farm, Mrs. Jennie C. Barlow; discussion; address, The Way and Means by Which a Farmer's Wife May Help on the Farm, Mrs. Mary McHard; discussion; music.

Evening session, 7:30 o'clock.

Organ voluntary; music, Glee Club; Foods and Nutrition, Mrs. Barbara E. Page; discussion; vocal duet; solo, J. G. Arthur.

Thursday, January 24. Morning session—10 o'clock. J. H. Coolidge, president 10th District, presiding.

Organ, voluntary; prayer, Rev. W. M. Story; address, Sorghum, Rape and Hairy Vetch, Henry Wallace; questions; music, Gerald Goddard; appointment of nominating committee; appointment of committee on resolutions.

Afternoon session, 2:00 o'clock.

Piano solo, Agricultural Education, G. A. Wilmarth; discussion; violin solo, Gerald Goddard; Clover, Henry Wallace; discussion.

Evening session, 7:30 o'clock.

Music, High School Orchestra; Beef Production in Illinois, L. H. Kerrick; discussion; Music, High School Quartette; Good Roads, H. H. Gross; music, Home, Sweet Home, Gerald Goddard.

Friday, January 25. Morning session—10:00 o'clock.

Music; prayer, Rev. J. W. Edwards; song; election of officers; Fruit Culture, Arthur Bryant; discussion; music, Glee Club.

Afternoon session, 2:00 o'clock.

Violin solo, Willett Thornton; Wheat Culture, Rev. N. W. Thornton; music—piano solo; Corn Culture, Prof. A. D. Shamel.

Average daily attendance, 275. Cost of Institute, \$100.14.

Officers elected for the ensuing year—President, A. L. Woodhams, New Windsor; secretary, Gerald Goddard, New Windsor; treasurer, Elisha Lee, Hamlet.

MONTGOMERY COUNTY FARMER'S INSTITUTE.

Held at Litchfield, Ill., Tuesday, Wednesday and Thursday, October 9, 10, and 11, 1900.

Officers—Edward Grimes, President, Raymond, Ill.; Arthur Ware, Vice-President, Butler, Ill.; E. C. Richards, Secretary, Hillsboro, Ill.; Wm. A. Beatty, Treasurer, Raymond, Illinois.

Directors—S. E. O'Bannon, Litchfield, Ill.; T. T. Smith, Walshville, Ill.; S. E. Simonson, White Oak, Ill.; A. A. Beatty, Witt, Ill.; William Black, Donnellson, Ill.

Mrs. Mamie Charles-Towey, Musical Director.

Program—Tuesday, October 9. Morning session, 10:00 o'clock.

Music, chorus; invocation, Rev. J. A. Gerhard, Litchfield; address of welcome, Hon. D. R. Kinder, Litchfield; response, Vice-President Arthur Ware, Butler; address, President Edward Grimes, Raymond; reading minutes, Secretary E. C. Richards, Hillsboro; report of Treasurer, W. A. Beatty, Raymond.

Afternoon session, 1:30 o'clock.

Music, piano solo, Miss Mabel Rose; Type and Quality in Farm Stock, illustrated, A. P. Grout, Winchester; discussion, Robert Bryce, Butler; music, vocal solo, Miss Elizabeth Elliman, Butler; Tuberculosis in Cattle, Dr. A. Travis, V. S., Litchfield; Growing and Marketing Potatoes, Hon. E. W. Burroughs, Edwardsville, Director 18th Congressional District Farmers' Institute.

Evening session, 7:30 o'clock.

Music, vocal duet, Miss Pierce and Mrs. Hussey; recitation, Miss Mary Hughes, Litchfield; music, vocal solo, Mrs. Mamie Charles-Towey, Litchfield, How to Keep the Old Man on the Farm, Hon. Joseph Carter, Champaign.

Wednesday, October 10. Morning session, 10:30 o'clock.

Prayer, Rev. W. J. Spire, Litchfield; music, piano solo, Mrs. Ora Huddleston, Farmers'ville; Breeding and Management of Swine, Hon. G. A. Willmarth, Seneca, President State Farmers' Institute; music, vocal solo, Miss Minerva C. Thomas, Thomasville; Farm Drainage, Arthur Ware, Butler.

Afternoon session, 1:30 o'clock. Domestic Science Session.

Music, America, audience; address of welcome, Mrs. G. L. Settlemyre, Litchfield, response, Mrs. J. R. Challacombe, Hillsboro; report of Secretary, Miss Camilla Jenkins, Butler; music, vocal solo, Miss Grace Pierce, Litchfield; Poultry on the Farm, Mrs. Laura Thomas, Thomasville; address, Mrs. Agnes Ball-Thomas, Thomasville; report of work at School of Cookery at Springfield, Miss Bessie Beatty, Raymond; music, vocal solo, Mrs. Mamie Charles-Towey, Litchfield; The Home on the Farm, Miss Ida E. Turner, Butler; The Art and Science of Homemaking, Mrs. H. M. Dunlap, Savoy; opening of the question box; A Two Minutes Talk, Hon. E. W. Burroughs, Edwardsville, Director of 18th Congressional District; election of officers.

Evening session, 7:30 o'clock.

Music, piano solo, Miss Mabel McGown, Raymond; recitation, Miss Mabel Bowles, Raymond; music, vocal solo, Miss Mollie Hughes, Raymond; Teaching Domestic Science, Mrs. Nellie S. Kedzie, Peoria; recitation, Miss Coral Wright, Litchfield.

Thursday, October 11. Morning, 10:30 o'clock.

Prayer, Rev. C. D. Purlee, Litchfield; music, piano solo, Mrs. G. L. Settlemyre, Litchfield; Farm Telephones, E. C. Richards, Hillsboro; music, vocal solo, Mrs. Fannie Faught, Litchfield; Cow Peas, Soja Beans and Clover, Abe Brokaw, Litchfield; discussion, Jesse Osborn, Butler; Corn, Wm. H. Rowe, Jacksonville.

Afternoon session, 1:30 o'clock.

Music, piano solo, Miss Myrtle Strider, Raymond; Farm Economy, Ward M. Carter, Irving; music, vocal solo, Miss Louise Hood, Litchfield; The Care and Handling of Milk for City Trade and on the Farm, Oscar Erf, B. S., Urbana.

Average daily attendance, 1,000. Cost of Institute, \$136.64.

Officers elected for the ensuing year—President, Edward Grimes, Raymond; Secretary, E. C. Richards, Hillsboro; Treasurer, William Beatty, Raymond.

MORGAN COUNTY FARMER'S INSTITUTE,

Held in the Armory Hall, Jacksonville, November 20 to 22, 1900.

Officers—President, W. H. Stevenson; vice-president, Chas. A. Rowe; treasurer, R. S. Wood; secretary, A. C. Rice, Arnold.

Program, Tuesday, January 20. Morning session—10:30 o'clock.

Prayer; music; president's address, W. H. Stevenson; music; Open Parliament—Some Mistakes and Failures in 1900.

Afternoon session, 1:30 o'clock.

Music: The Sugar Beet Industry and Its Place in Illinois Agriculture, Prof. P. Y. Holden, Pekin; music; Clover, Dr. Henry Wallace, Des Moines, Iowa; questions and discussion invited on all topics.

Wednesday, January 21. Morning session—9:30 o'clock.

Prayer; music; Swine Husbandry, G. A. Willmarth, president Illinois Farmers' Institute; music; Corn—Quality and Judging, Prof. Holden.

Afternoon session, 1:30 o'clock.

Music: The Sheep Industry, Henry Wallace; music; An Hour with the Woman's Country Club; Agricultural Education, President Willmarth.

Evening session, 7:45 o'clock.

Music; address, Agriculture for the Common Schools of Illinois, Prof. Frank H. Hall; music; address, Rents, Dr. Henry Wallace; music; address, The Farm's Best Product, Dr. J. C. Gordon.

Thursday, January 22. Morning session—9:30 o'clock.

Prayer; music: Type and Quality in Farm Stock, A. P. Grout, Winchester; Cattle Feeding; discussion, S. D. Masters, Thomas Harrison, Henry Stewart, Samuel Newton, J. B. Williams; election of officers for the ensuing year.

Afternoon session, 1:30 o'clock.

Music: The Farmer's Garden, E. E. H. Ticknor; music: Some Poultry Experience, Mrs. George Fox, Chapin; music: The Cow Pea Discussion, W. H. Rowe, J. C. O'Neal, L. H. Callaway.

Average daily attendance, 400. Cost of Institute, \$94.45.

Officers elected for the ensuing year—President, John B. Joy, Chapin; secretary, J. H. Hackett, Jacksonville; treasurer, Stanfield Baldwin, Jacksonville.

Had an exhibit of farm and domestic products.

MONROE COUNTY FARMERS' INSTITUTE,

Held in Turner Hall, Columbia, November 20 and 21, 1900.

Officers—President, John G. Schneider, Harrisonville; vice-president, Balzer Schmidt, Waterloo; secretary, W. J. Harms, Kidd; treasurer, P. A. Maus, Waterloo.

Program, Tuesday, November 20, 1900. Morning session, 11 o'clock.

Music; address of welcome, Mayor J. W. Warnock, Columbia; response, John G. Schneider, Harrisonville, president Monroe County Farmers' Institute; Benefits of Farmers' Institutes, Balzer Schmidt, Ph. Gummersheimer; Orchards and Small Fruits, Wm. Monner, G. R. Tate.

Afternoon session, 1:30 o'clock.

Answers to questions in query box; Dairying on the Farm, Hon. J. W. Drury; The Best Horse for the Farmer, Theo. Klinkhardt, Hecker, J. C. Ware, Champaign; General Farming, Fred Baltz Sr., Chas. Schuler, D. D. Cullen; Improvement of County Roads, Henry Nieman, Fred Lauer, Chas. McMullin and Philip Jansen; Our Country Schools, Fred G. Rap.

Evening session, 7:30 o'clock.

Music, Elite M. & G. Club; The Kind of Education Necessary for the Farmer, R. P. Briegel; Poultry, and their Profits on the Farm, J. H. Ware, Champaign, Ill.; selection, Elite M. & G. Club; The Boy on the Farm, G. R. Tate; Grain and Stock Feeding, Frank Moore, Chester, Ill.; music, Elite M. & G. Club.

Wednesday, November 21, 1900. Morning session—8:30 o'clock.

Vocal music; Potato Culture, Herman Beckerle; Hog Raising and Its Profits, Jno. G. Schneider and Louis Brandt; Creameries, their Advantage to the Farmer, Fred Baltz, Jr.; Cattle Raising for Profit, Jno. T. McCaffrey; Leaks on the Farm, G. R. Tate, St. Clair county.

Afternoon session, 1:00 o'clock.

Answer to questions in query box; The Farmer as a Business Man, Frank Moore, Chester, Ill.; Principal Insects Enemies of Wheat, Prof. S. A. Forbes, State Entomologist; report of officers; report of committees; election of officers; appointment of delegate to State Institute.

Average daily attendance, 100. Cost of Institute, \$58.69.

Officers elected for the ensuing year—President, Balzer Schmidt, Waterloo; secretary and treasurer, William J. Harms, Kidd.

MOULTRIE COUNTY FARMERS' INSTITUTE.

Held at Sullivan, December 11 and 12, 1900.

Officers—President, T. H. Crowder, Bethany; Secretary, *pro tem.*, G. W. Vaughn, Sullivan; Treasurer, Marman Huffman, Lovington.

Program—Tuesday, December 11, 7:00 o'clock p. m.

Music by the orchestra; invocation, Rev. S. P. Taylor; song, Kennedy Male Quartette, Bethany; Value of University Agricultural Education, J. J. Fairchild; oration, The Farmer's Wife, Alvin Waggoner, Gays; music, duet, Miss Gertie Meeker and E. J. Miller, Sullivan; address, Wm. Bone; recitation, Eva Potts, Lovington; recitation, Maggie Sherman, Lake City; recitation, Paul Wiley, Sullivan; music, Sullivan Quartette; benediction.

Wednesday, December 12, 10:00 o'clock a. m.

Music, audience; invocation, Elder Curry; Corn Culture and Its Uses, A. D. Shamel, Champaign University; discussion, by the Institute; Raising Poultry for Profit, Mrs. S. Rose Carr, Fringe Farm Poultry Yard, Lis, Ill.

Afternoon session, 1:30 o'clock.

Music, Christian Church Choir; invocation, Rev. Collins; Clover and Hogs, V. G. Way, Proctor, Ill.; discussion, by the Institute; music; election of officers; benediction.

Public School Program—Wednesday, December 12, 7:00 o'clock p. m.

Song, C. P. Church Choir; invocation, Rev. Tull; overture, High School Orchestra; recitation, Marie Gillham; chorus, High School; manual training, H. A. Bone, Principal Sullivan High School; recitation, Cora Gauger; duet, Pearl Powell and Mae Dunscomb; The Farmer of 1960, Arthur Wright; music, High School Orchestra; recitation, Cora Lane; The Township High School in Illinois, E. A. Cross, Superintendent Sullivan Schools; solo, Miss Gertrude Meeker, teacher of music, Sullivan schools; essay, Lois Harshman; chorus, High School.

Average daily attendance, 500. Cost of Institute, \$28.96.

Officers elected for the ensuing year—President, J. L. Rhodes, Bethany; Secretary Marian Woodruff, Bethany; Treasurer, George Righter, Sullivan.

OGLE COUNTY FARMERS' INSTITUTE.

Held with the Congressional District Institute, at Opera House, Polo, Ill., Wednesday, Thursday and Friday, January 23, 24 and 25, 1901.

Officers—Amos F. Moore, President, Polo, Ill.; Alvin Joiner, Secretary and Treasurer, Polo, Ill.

Executive Committee—Hon. A. J. Countryman, Rochelle; Chas. Kings, Kings; Jacob Swank, Forreston; Charles Walkup, Oregon; Alvin Joiner, Polo; Amos F. Moore, Polo.

Program—Wednesday, January 23. Morning session, 10:00 o'clock. A. F. Moore, presiding.

Appointing of committees and other business.

Afternoon session, 1:30 o'clock.

Invocation, Rev. J. G. Crowder; address of welcome, Mayor George W. Perkins; response, Alvin Joiner. Forage Plants and Legumes, A. W. Brayton, Mt. Morris; discussion by J. L. Hartwell and others; Breeding and Judging of Cattle, B. R. Pierce, Creston; discussion, A. J. Lovejoy, Roscoe.

Evening session, 7:00 o'clock.

Music, Polo Orchestra; president's address, A. F. Moore; Sanitary Conditions of the Home, Miss Esther Waterbury; music, Polo Orchestra; The Coming Farmer—Character, Grade, Results, Hon. A. S. Collins, Harvard; music, orchestra.

Thursday, January 24. Morning session, 10:00 o'clock.

Invocation, Rev. J. H. Moore; Breeding and Sale of Horses, Chas. Walkup, Oregon; discussion led by A. F. Moore; The Result of Experiment Station Work, J. L. Hartwell, Dixon.

Afternoon session, 1:30 o'clock.

Address, Prof. Eugene Davenport, Dean Agricultural College, Urbana; What Inducements Does the Farm Hold Out to the Young People of Today? Hon. A. S. Collins, Harvard.

Evening session, 7:00 o'clock.

Music, Polo Orchestra; program by pupils of Polo school; Prof. S. M. Abbott, presiding.



Alvin Joiner, Polo, Ill.

Friday, January 25. Morning session, 10:00 o'clock.

Invocation, Rev. P. Holtgreve; Centralization of Township Schools, Prof. O. J. Kern, Rockford; discussion led by Prof. J. M. Piper and J. L. Hartwell.

Afternoon session, 1:30 o'clock.

Types of Live Stock, illustrated, Hon. A. P. Grout, Winchester; discussion led by Johnson Lawrence and Naaman Woodin.

Evening session, 7:00 o'clock.

Music, orchestra; Domestic Science, Mrs. Nellie S. Kedzie, Professor of Domestic Science in Bradley Polytechnic Institute, Peoria; music, orchestra; reports of the different committees; music, orchestra.

Average daily attendance, 490; cost of institute, \$127.96.

Officers elected for the ensuing year—President, George Farwell, Mt. Morris; Secretary and Treasurer, Charles Walkup, Oregon.

PEORIA COUNTY FARMERS' INSTITUTE,

Held in Hanna City, Ill., Wednesday and Thursday, October 24 and 25, 1900, and Friday, February 1, 1901.

Officers—President, Chas. T. Woodman, Alta; vice-president, Henry C. Gordon, Orange Prairie; secretary and treasurer, Arthur H. Yates, Dunlap.

Program, Wednesday, October 24. Afternoon session—2:00 o'clock.

Invocation, Rev. H. C. Birch, Hanna City; address of welcome, Rev. Mr. Onion, Hanna City; response, O. Wilson; reading of minutes, Arthur H. Yates; president's address, Chas. T. Woodman; address, Work and Mission of Farmers Institutes; discussion, F. M. Higgins.

Evening session, 7:30 o'clock.

Address, How Shall the Farmer Forge His Way to the Front of the Industrial Procession? Robert C. Morris, Olney; discussion; query box, supervised by R. G. McCullough, Hanna City.

Thursday, October 25. Morning session—10:00 o'clock.

Address, Oliver Wilson, Magnolia; election of officers; miscellaneous business.

Afternoon session—1:30 o'clock.

Address, What Clover, Cow Peas and Soy Beans Will Do for a Worn Out Farm and a Discouraged Farmer, Robert C. Morris, Olney; address, Dairy Husbandry, Prof. Wilber J. Fraser, Urbana.

Friday, February 1. Morning session—9:30 o'clock.

Prayer; address, Agriculture in Peoria County Schools, Prof. J. L. Robertson, Peoria; discussion; Farm Horses, Hon. E. E. Chester, Champaign; discussion; Silos—How to Build and Fill, Euclid N. Cobb, Monmouth; discussion.

Afternoon session—1:30 o'clock.

Cultivation of the Corn Crop, Prof. A. D. Shamel, Champaign; discussion; Land Owner and Tenant, Hon. E. E. Chester, Champaign; discussion; Nutriment of Feeds and the Relation to Farm Animals, Euclid N. Cobb, Monmouth.

Average daily attendance first meeting, 60. Cost, \$52.52.

Average daily attendance second meeting, 75. Cost, \$25.40.

Officers elected for the ensuing year—President, Ira Cottingham, Eden; secretary and treasurer, William West, Hanna City.

PERRY COUNTY FARMERS' INSTITUTE.

Held at the Court House, Pinckneyville, Ill., Thursday and Friday, November 22 and 23, 1900.

Officers—F. A. Williams, President, Tamaroa; John McLaughlin, Vice-President, Campbell Hill; Frank C. Paige, Secretary and Treasurer, Tamaroa.

Program—Thursday, November 22.

Morning session—9:30 o'clock.

Invocation, Rev. C. M. Richie, Pinckneyville; address of welcome, Mayor G. F. Mead, Pinckneyville; response, President F. A. Williams, Tamaroa; Common Sense Fruit Growing for Farmers, F. S. Williams, Tamaroa; Growing Strawberries for Home and Market, Jas. B. Ervin, Swanwick; Experience with Leguminous Crops in 1900, A. A. Hinckley, DuBois.

Afternoon session—1:15 o'clock.

Poultry—Plymouth Rock and Brown Leghorn, E. C. Eaton, Pinckneyville; White Wyandotte, W. C. Marlow, Sunfield; Light Brahma and Black Langshan, Dwight Kinzey, Tamaroa; Pekin Ducks, Geo. M. Ames, Tamaroa; Practical Poultry House and Methods of Managing Poultry, Mrs. Porter Baird, Pyatt; Domestic Science, Mrs. Nora B. Dunlap, Savoy; Leaks on the Farm, John B. Pier, Cutler.

Evening session—7:30 o'clock.

Mrs. Dunlap gave a talk on Domestic Science, and the rest of the evening was devoted to music, recitations, etc. by Pinckneyville and country schools. The exercises were of interest to all, old and young, city and country.

Friday, November 23. Morning session—9:30 o'clock.

Music; invocation, Rev. L. L. Stierwalt, Pinckneyville; Beef Cattle—Polled Angus, Wm. Jackson, DuQuoin; Shorthorn, Matt. Robb, Swanwick; Feeding Steers, W. C. Davis, Fairfield; Hogs—Poland China, H. C. Milligan, Pinckneyville; Berkshire, J. F. Barrows, Campbell Hill; How a Common Farmer Raises Hogs, R. W. Hawkins, Tamaroa; Sheep Raising, A. C. Hoge, DuQuoin; Practical Horse Breeding, J. C. Ware, Champaign.

Afternoon session—1:15 o'clock.

Wheat Culture, Joseph Gilmore, Coulterville; Hired Help on the Farm, W. T. White, Cutler; Silos and Ensilage, W. C. Davis, Fairfield; Recent Experience with Ensilage in Perry County, Samuel Cotton, St. Johns, and Wm. Hammack, Pinckneyville; reports of committees and business.

Average daily attendance, 125. Cost of Institute, \$61.38.

Officers elected for the ensuing year—President, John B. Pier, Cutler; Secretary and Treasurer, W. T. White, Cutler; Vice-President, James B. Ervin, Swanwick.



F. C. Paige, Tamaroa, Ill.

PIATT COUNTY FARMERS' INSTITUTE,

Held with 13th Congressional District Farmers' Institute at Town Hall, Monticello, Ill., Tuesday, Wednesday and Thursday, December 11, 12 and 13, 1900.

S. Noble King, Bloomington, director.

Officers—President, C. J. Beard, Monticello; vice-president, Jesse Warner, Monticello; secretary, Thimas Lamb, Bement; treasurer, J. P. Ownby, Monticello.

Executive Committee—John Richie, Mansfield; F. I. J. Atter, Monticello; George B. Alvord, Bement; George Trenchard, DeLand; P. Dobson, Cerro Gordo; James Rankin, Atwood; White Heath, Atwood; C. B. Moore, Atwood.

Program, Tuesday, December 11. Morning session—9:30 o'clock.

Music; devotional exercises, Rev. A. Waterbury; address of welcome, Mayor J. E. Andrew; response, George B. Alvord, Bement; minutes of last Institute, Secretary Thomas Lamb, Jr.; treasurer's report, Treasurer J. P. Ownby; president's address; music; appointment of committees.

Afternoon session, 1:30 o'clock.

Domestic Science Club—Mrs. Bertha R. Bear, president; Mrs. Lulu Kagey, secretary.

Music; paper, Mrs. George Trenchard, DeLand; music; Women as Housekeepers, Mrs. J. D. Bodman, Bement; music; paper, Miss Jessie Holmes, Monticello; music; Cereal Foods, Their Uses, Effects and Preparation, Miss Emma C. Sickles, Chicago; paper, Miss Grace Handley, Monticello; music; Butter Making, Miss Dora Fischer.

Evening session, 7:00 o'clock.

Music; address, Alfred Bayliss, Stat Superintendent Public Instruction, Springfield.

Wednesday, December 12. Morning session—9:30 o'clock.

Music; devotional exercises, Rev. H. G. Gleiser; Mechanics on the Farm, O. A. Lindelof, Sibley; discussion; Swine Feeding, Prof. W. J. Kennedy, University of Illinois; discussion; A Farm and Its Management, I. S. Raymond, Philo; discussion; paper, J. P. Cratz; music; Apple Growing, Governor J. R. Tanner; The Farmer and His Son, F. A. Warner, manager Sibley estate; music; The Farmer of the Future, I. N. Belbinger, Milmine; discussion; Talk on Corn, F. A. Warner, Sibley; discussion; How I Handle My Sheep, E. D. Funk, Shirley; Farmers' National Congress, W. M. Dewees, delegate, DeLand.

Evening session, 7:00 o'clock.

Piano solo; reading of essays by pupils of Platt County Schools; chorus; other essays; music; Heating and Ventilating Country School Houses, Charles McIntosh, County Supt. Schools; address, Prof. C. M. Moss, University of Illinois.

Thursday, December 13. Morning session—9:30 o'clock.

Music; devotional services, Rev. J. H. Waterbury; Corn Breeding, S. F. Null, State Experiment Station; Farm Telephones, W. F. Lodge; Experience with Farm and Stock, Charles Adkins, Bement; discussion; Farmers' Organizations, W. C. Hubbard; reports of committees, on nomination of officers, on resolutions.

Afternoon session, 1:30 o'clock.

Music; Mistakes in Farming, S. W. Allerton, Chicago; discussion; Successful Farming, W. E. Lodge; discussion; music; Taxation and the Farmer, Prof. Charles W. Tooke, University of Illinois; question box.

Average daily attendance, 250. Cost of Institute, \$124.97.

Officers elected for the ensuing year—President, C. W. Tatman, Monticello; secretary, William Dighton, Monticello; treasurer, Winn Royer, Monticello.

PIKE COUNTY FARMERS' INSTITUTE.

Held in the Court House, Pittsfield, Ill., Thursday and Friday, December 13 and 14, 1900.

Officers—H. J. Westlake, President Pittsfield; C. G. Winn, Vice-President, Pittsfield; W. A. Reed, Secretary, Pittsfield; W. R. Wilsey, Treasurer, Pittsfield.

Program—Thursday, December 13. Morning session—9:30 o'clock. H. J. Westlake, Chairman.

Music, orchestra; invocation, Rev. Mr. Bruce, of the Baptist church; address of welcome, Dr. R. O. Smith, Mayor of the city of Pittsfield; response, H. J. Westlake; resolutions; appointment of committees; address—Cow Peas, L. H. Callaway; discussion, Charley Bolin, C. G. Winn, T. N. Hall, John W. Dorsey and A. S. Archer.

Afternoon session—1:30 o'clock. H. J. Westlake, Chairman.

Music, orchestra; address—Horticulture, L. H. Callaway; discussion, Ervan Webster, W. R. Wilsey, C. G. Winn; address—Poultry, Mrs. Geo. Fox; discussion, Mrs. Fred McCord, Mrs. M. A. Westlake, Mrs. M. Y. McMahan, Mrs. Cyrus Rush, Mrs. Howard Cohenour and Mr. Edward McCallister; question box; adjournment.

Evening session—7:15 o'clock.

Music, orchestra; address—Farm Garden, W. R. Wilsey; open discussions limited to five minutes; music, orchestra; song, Virginia Blanch Obannon; song, K. Katherine Hess; recitation, Raymon Knox; song, male quartette; music, Stanley and Terrence Hess; recitation, Virginia Blanch Orannon; piano solo, Maud Allen; recitation, Burtie M. Archer; music, Bertrand Westlake; im'phone, K. Katherine Hess; adjournment.

Friday, December 14. Morning session—9:30 o'clock.

Music, orchestra; invocation, J. Monroe Markley; (this session was devoted to the county Domestic Science Association); address, President Mrs. C. G. Winn; report of the secretary, Mrs. Louise Shinn; discussion, Mrs. M. A. Westlake, Mrs. M. Y. McMahan, Mrs. Judge Orr and Mrs. W. R. Hatfield; address—Clover, Dr. Henry Wallace; discussion, C. G. Winn, Dan Dunham, J. W. Dorsey, Wm. Hess, W. H. Wilson and W. R. Wilsey.

Afternoon session—1:30 o'clock. C. G. Winn, presiding.

Music, orchestra; address—Cattle Raising, Henry Wallace; discussion, H. J. Westlake, Dan Dunham and Charley Bolin; address—Points on Cattle, A. P. Grout; open discussions; question box; address.

Evening session—7:30 o'clock.

Music, orchestra; address—Rents, Dr. Henry Wallace; discussion open to all; question box.

Average daily attendance not reported. Cost, \$85.05.

Officers elected for the ensuing year—President, C. G. Winn, Griggsville; Vice-President, T. W. Dorsey, Perry; Secretary, Fred Farrand, Griggsville; Treasurer, Robert Anderson, Griggsville.

POPE COUNTY FARMERS' INSTITUTE,

Held at Golconda, Illinois, Tuesday and Wednesday, November 27 and 28, 1900, and Friday and Saturday, February 1 and 2, 1901.

Officers—Geo. Gebaur, President, Rising Sun; A. H. Floyd, Secretary, Golconda; H. W. Wellman, Treasurer, Golconda.

Program—Tuesday, Nov. 27. Morning session, 9:30 o'clock.

Prayer, Rev. G. W. Scawthon; address of welcome, J. C. Thompson; response, W. E. Baker; Cow Peas for Feed, Geo. C. Walter; discussion, Geo. W. Moyers; Hay and Pasture Seeding, H. W. Wellman; discussion, S. E. Vaughn.

Afternoon session, 1:30 o'clock.

Corn Fodder; Its Care and Management, A. H. Floyd; Farm Mutual Insurance, Henry Walter; Cultivation of Corn, A. J. Yates, McLeansboro.

Wednesday, Nov. 28, 9:00 o'clock.

Prayer, Dr. Stevenson; Wheat and Wheat Culture, Geo. Barringer, Jonesboro; discussion, J. F. Homberg; Seeding and Care of Clover, Geo. Blatter; discussion, S. B. Taylor; What Should the Farmer and His Family Read? D. G. Thompson; discussion, John H. Hodge; Breeding and Care of Hogs, Frank Sutherland; discussion, Milo Austin.

Afternoon session, 1:00 o'clock.

Best Way to Overcome Drought, A. J. Yates; Water Supply for Man and Stock, J. N. Maynor; discussion, J. R. Steagall; Good Roads, Joe M. Baker; discussion, J. J. Belford; election of officers.

Friday, Feb. 1, 9:00 o'clock.

Prayer, Rev. E. M. Steen; music; address of welcome, D. G. Thompson; response, J. N. Maynor; The Horse for the Farmer to Raise, W. C. Cheney; Clover and Its Value on a Farm, Henry Walter and S. E. Vaughn.

Afternoon session, 1:00 o'clock.

Music; Rotation of Crops, H. G. Easterly, Loren Floyd; Pasture the Year Round, F. L. Sutherland, George Walter; Raising and Care of Pea Hay, Chas. Hawker, William Truebger; The Farmer and Education, Prof. T. C. Clendenin.

Evening session.

Music; prayer, Rev. G. W. Scawthon; address, Dr. Stevenson; Social Evolution, or From Country to City, and the Result, Prof. T. C. Clendenin; The Farmer and His Home, John H. Hodge, T. J. Carr.

Saturday, Feb. 2. Morning session.

Music; prayer, Rev. J. C. Thompson; Leaks on the Farm, Geo. Gebauer, S. B. Taylor; Good Roads and How to Get Them, H. H. Gross, J. J. Belford and Sam Clark; The Improvement and Maintenance of Soil Fertility, A. H. Floyd, H. G. Easterly.

Afternoon session. Domestic Science Department.

Home Economy, Mrs. H. G. Easterly; The Farmer's Wife and Her Table, Mrs. Lou Smith; Report of the Cooking School at Springfield, Mrs. H. G. Easterly; Better Education for Country Boys and Girls, Miss Laura Robertson; The Making, Keeping and Marketing of Butter, Mrs. Jas. Hammons.

Average daily attendance, first meeting, 75; cost of institute, \$33.45. Average daily attendance, second meeting, 75; cost of institute, \$27.47.

Officers elected for the ensuing year—President, F. L. Sutherland, Golconda; Secretary, A. H. Floyd, Golconda; Treasurer, H. W. Wellman, Golconda.



A. H. Floyd, Golconda, Ill.

PULASKI COUNTY FARMERS' INSTITUTE.

Held at Villa Ridge, October 26 and 27, 1900.

Officers—President, F. E. Graves, Villa Ridge; Secretary, H. L. McGee, Villa Ridge; Treasurer, H. M. Hogendobler, Villa Ridge.

Program—Opening session, 10 a. m. October 26.

Music; prayer; address of welcome, by President; response, J. H. Conant; music; report of Secretary and Treasurer; appointment of committees.

Afternoon session—1:30 o'clock.

Horticultural session—Commission Man's Idea of Packing Fruit for Market, George W. Gould, Jr.; music; Tomato and Melon Growing for Market, E. R. Jinnette, Anna, Ill.; From Field to Market, J. F. Welson; music; Farm Orchards, D. H. Winans; music.

Evening session—7:30 o'clock.

Prof. J. C. Blair, of Urbana, entertained the audience with a variety of stereopticon views.

Morning session—10 o'clock, October 27.

Woman's session—Music; The Girl on the Farm, Maud Endicott; School and Home Prof. W. N. Moyers; music; Order in the Home, or Systematic Housekeeping, Mrs. J. M. Clark, Sparta, Ill.; music; The Mother's Duty in the Home, Mrs. W. H. Leidigh; music.

Noon session.

Basket dinner. Every one was invited to bring a basket.

Afternoon session—1:30 o'clock.

Agricultural and live stock session—Care of a Dairy Herd, Dave Redden; Breeding and Feeding the Dairy Cow, W. C. Davis, Fairfield, Ill.; music; The Hog, L. Holden; music; Wheat and Wheat Culture, George Barringer, Jonesboro, Ill.; Progress of Grain Growing in Pulaski County, Thomas Steers; music; election of officers; adjournment.

Average daily attendance, 175. Cost of Institute, \$72.70.

Officers elected for the ensuing year—President, F. E. Graves, Villa Ridge; Vice-President, W. H. Leidigh, Villa Ridge; Secretary, H. L. McGee, Villa Ridge; Treasurer, H. M. Hogendobler, Villa Ridge.

PUTNAM COUNTY FARMERS' INSTITUTE.

Held at Hennepin, Illinois, Wednesday and Thursday, December 19 and 20, 1900.

Officers—E. B. Culter, president, Florid, Illinois; F. E. Smith, secretary, McNabb, Illinois.

Executive Committee—Wm. Francis, Henry, Ill.; W. G. Griffith, McNabb, Ill.; Howard Williams, Putnam, Ill.; J. E. Barnard, Peru, Ill.

Program—Wednesday morning—10:00 o'clock.

Prayer; music; address of welcome Mrs. Casson; response, John Swaney; music; president's address, E. B. Culter.

Afternoon session—1:30 o'clock.

Music; paper, "How Shall we Live," Mrs. James Thornton; discussion, Mrs. Harper, Mrs. L. M. Bumgarner; paper, Household Economics, Mrs. C. M. Chase; discussion, Mrs. Joseph Albert, Mrs. Lena Durley; address, A Balanced Ration; what it is and why it should be fed, H. B. Rice; discussion, Elmer Quinn, John Sutherland.

Evening session—7:30 o'clock.

Violin solo, Jackson Euard, Putnam, Ill.; recitations, Miss Phebe Cofold, Hennepin, Miss Mary Williams, Putnam, Miss Maggie Franceway, Granville and Miss Belle Bumgarner, Magnolia; address, The Country School, Alfred Bayliss, Supt. Public Inst. Springfield; music.

Thursday morning—10:00 o'clock.

Prayer; Music; speech, The Farmer and Education, A. J. Robinson; discussion, W. E. Hawthorne, John Kays; address, Profitable Swine Breeding, Ira Cottingham, Eden, Ill.; discussion, W. C. Griffith, M. E. Newburn; paper, Free Rural Delivery, O. Wilson; discussion, J. M. McNabb, J. E. Taylor; music.

Afternoon session—1:30 o'clock.

Music; paper, Home Influences Mrs. L. Emma Wilson; address, The Work of the Agriculture, Eugene Davenport, Champaign, Ill.; question box, Miss Addie Durley.

Average daily attendance, 120. Cost of institute, \$70.20.

Officers elected for the ensuing year—President, Geo. N. Hayslip, Granville, Ill.; secretary and treasurer, F. E. Smith, McNabb.

Had an exhibit of Farm and Domestic products.

RANDOLPH COUNTY FARMERS' INSTITUTE,

Held in the Auditorium, Sparta, Ill., Wednesday and Thursday, November 21 and 22, 1900.

Officers—President, J. M. Clark, Sparta; vice-president, J. C. Foster, Sparta; secretary, Wm. A. McIntire, Sparta; treasurer, T. L. McMillan, Sparta.

Executive Committee—Geo. W. Wilson, Sparta; J. W. Caldwell, Sparta; M. R. Lessley, Houston.

Program, Wednesday November 21, 1900. Morning session—10:30 o'clock.

Music; prayer; address of welcome, T. B. Stevenson, Sparta; response, W. N. Wilson, Baldwin; music; Farmers Co-operation, J. T. Cross, Shiloh Hill; appointing committees; music; question box and adjournment.

Afternoon session, 1:30 o'clock—Woman's session.

Piano solo, Mrs. C. O. Boynton, Sparta; prayer, Mrs. Craig, Sparta; music, Ladies' Quartette; address of welcome, Mrs. W. D. M. Eiker, Sparta; response, Mrs. J. M. Clark, president Domestic S. A., Sparta; vocal solo, Miss Gertrude Finley, Sparta; paper, The Farmers' Helpmeet, Mrs. Wm. A. McIntire, Sparta; piano solo, Mrs. H. Grensitt, Sparta; address, Domestic Science, Mrs. H. M. Dunlap, Savoy; music, Ladies' Quartette; address, Farmers' Wife of the 20th Century, Rev. J. L. Chestnut, Coulterville; music and adjournment.

Evening session—Educational session.

Music; address, America, Its Destiny and the Public School, Prof. L. J. Sexton, principal of the Sparta High School; music; address, The Country School, Hon. Alfred Bayliss, State Superintendent of Public Instruction, Springfield; music and adjournment.

Thursday, November 22, 1900. Morning session—9:00 o'clock.

Music; prayer; Gardening, R. H. Allen, Sparta; Practical Horse Breeding, J. C. Ware, Champaign; Spraying, Geo. A. Morrow, Sparta; music; Swine Breeding, Ed. I. Thompson, Evansville; What Will Cow Peas, Clover and Soy Beans Do for a Worn Out Farm and a Discouraged Farmer, D. M. Hathorn, Blair and W. N. Wilson, Baldwin; Cattle Feeding, Israel Mills, Clay City, Clay Co.; music and adjournment.

Afternoon session, 1:30 o'clock.

Music; Wheat Raising, D. H. McFarland, Blair; H. E. McKelvey, Sparta; Common Sense in Farming and the Duties Farmers Owe Our Common Country, Thomas S. Paine, State Supt. of Agriculture, Nashville, Tenn.; Dairying and Stock Feeding, W. F. Johnson, Houston; Poultry on the Farm, J. C. Ware, Champaign; election of officers and report of committees and adjournment.

Average daily attendance, 400. Cost of Institute, \$75.76.

Officers elected for the ensuing year—President, Geo. A. Morrow, Sparta, F. R. D. No. 1; secretary, H. E. McKelvey, Sparta, F. R. D. No. 2; treasurer, John Craig, Sparta, F. R. D. No. 2.

RICHLAND COUNTY FARMERS' INSTITUTE AND 19TH CONGRESSIONAL DISTRICT FARMERS' INSTITUTE.

Held at Olney, Illinois, January 2, 3 and 4, 1901.

Officers—Ed. Phillips, president, Olney; F. Britton, secretary and treasurer, Calhoun; D. H. Shank, Director of the 19th District Illinois Farmers' Institute, Paris.

Program—Wednesday, January 2. Morning session—10 o'clock.

Music by Noble Quartette; prayer, Rev. Hough, Olney; address of welcome, Rev. Hough, Olney; response, President Ed. Phillips, Olney; address, D. H. Shank, Paris; The Farmer's Salutation or Good Morning, A. A. Nees, Newton; music by quartette.

Afternoon session—1:00 o'clock.

Music by quartette; paper—Breeding Seed Corn, J. B. Shipley, Wier; paper—Growing and Training an Orchard, W. D. Barr, Lawrenceville; discussion; music by quartette; paper—Sowing, Growing and Taking Care of Clover, Wm. Slemons, Paris; discussion; music by quartette.

Evening session—7:00 o'clock.

Music by quartette; entertainment by the Olney public school, assisted by the schools of the county; music by quartette.

Thursday, January 3. Morning session—10 o'clock.

Music by quartette; paper—Raising Clover and Cow Peas, Peter Beever, Effingham; the Advantage of Sheep on the Farm, W. H. Catey, Greenup; discussion; paper—Growing and Handling Broom Corn, Thornton Ashbrook, Charleston; discussion; paper—The Outlook for the Young Farmer, D. J. Duncan, Selmie, Ind.; music by quartette.

Afternoon session—1:00 o'clock.

Music by quartette; paper—Swine Husbandry and Education of the Farmer, President Willmarth, Seneca; discussion; paper—Corn Growing and Judging Corn, Miss Susie Bernhard, Urbana; discussion; paper—Cattle Feeding, Israel Mills, Clay City; music by quartette.

Evening session—7:00 o'clock.

Music by quartette; address by Prof. Evins of the Charleston Normal University, Charleston; music by quartette.

Friday, January 4. Morning session—10:00 o'clock.

Domestic Science Association, Mrs. Rose Carr presiding.

Music by quartette; address, Mrs. Carr, Lis; paper—Managing the Farm Boy and Child Training, Mrs. Robert English, Marshall; discussion; report of delegate to the Domestic Science School at Illinois State Fair, 1900, Eva Chapman, Wheeler; paper—Literature in the Farm Home, Mrs. Belle Shup, Lis; paper—Agricultural Education for the Farm Boys and Girls, Miss Susie Bernhard, Urbana; paper—Order in the Home, Mrs. J. M. Clark, Sparta; music by quartette.

Afternoon session—1:00 o'clock.

Music by quartette; paper—Stock Feeding, R. C. Morris, Olney; discussion; Good Roads, Special Government Agent H. H. Gross, Chicago; Swine Breeding, Wm. Willson, Trimble; discussion; election of officers; music by quartette.

Average daily attendance 500. Cost of Institutes, \$109.56.

Officers elected for the ensuing year—President, Ed. Philips, Olney; Secretary and Treasurer, Frank Britton, Calhoun, Ill.

ROCK ISLAND COUNTY FARMERS' INSTITUTE,

Held at Reynolds, Ill., Tuesday and Wednesday, January 15 and 16, 1901.

Officers—Wm. H. Wheaton, President, Reynolds; Henry Sadoris, Vice-President, Cee; H. B. Carpenter, Vice-President, Edgington; Eli Corbin, Secretary, Carbon Cliff; L. B. Strayer, Treasurer, Rock Island.

Executive Committee—Thomas Campbell, Rock Island; W. S. McCulloch, Taylor Ridge; W. H. Ashdown, Port Byron; Fred Osborn, Osborn; J. B. McConnell, Reynolds.

Program—Tuesday, January 15. Afternoon session, 1:00 o'clock.

Music; prayer, Rev. O. M. Dunlop, Reynolds; address of welcome, P. C. Ketzell, Edgington; response, W. H. Wheaton, Reynolds; How to Maintain the Fertility of the Soil, E. Lee, Hamlet; Corn Culture, Wm. Ringle, Osco; Potato Culture, W. S. McCulloch, Taylor Ridge; Domestic Science, Miss Anna Bailey, Moline.

Evening session, 7:00 o'clock.

Music: House Plants and Garden Flowers, Miss Henrietta Sherrard, Reynolds; Agricultural Education, G. A. Willmarth, President Illinois State Institute, Seneca; Centralization of Schools, S. J. Ferguson, County Superintendent of Schools, Rock Island.

Wednesday, Jan. 16. Morning session, 9:30 o'clock.

Reports of officers and committees; election of officers; Breeding and Care of Sheep, J. B. Townsend, Davenport, Iowa; Breeding and Management of Swine, G. A. Willmarth, Seneca; Practical Dairying on the Farm, J. B. McConnell, Reynolds.

The sessions were interspersed with music.

Each topic was thoroughly discussed.

Average daily attendance, 100; cost of institute, \$27.

Officers elected for the ensuing year—President, W. H. Wheaton, Reynolds; Secretary, Eli Corbin, Carbon Cliff; Treasurer, L. B. Strayer, Rock Island.



Eli Corbin, Carbon Cliff, Ill.

SALINE COUNTY FARMERS' INSTITUTE.

Held in the C. P. Church, Eldorado, Illinois, Tuesday and Wednesday, November 27 and 28, 1900.

Officers—J. J. Parish, president, Harrisburg; Hex. Bramlet, vice-president, Raleigh; Z. W. Young, secretary, Francis Mills; Thomas W. Webber, treasurer, Galatia.

Program—Tuesday, November 27, 1900.
Morning session—10:30 o'clock.

Song, choir; invocation, Rev. W. H. Nell, Eldorado; song, "America;" address of welcome, T. G. Mitchell, mayor, Eldorado; response, J. J. Parish, Pres. of Institute, Harrisburg; business; adjournment.

Afternoon session—1:30 o'clock.

Song; The Cultivation of Corn and the Best way to Overcome Drought, A. J. Yates, McLeansboro; Preserving the Fertility of the Soil, J. S. Naugle, Raleigh; followed by H. S. Anderson, Harrisburg; query box by the President; adjournment.

Evening session—7:00 o'clock.

Song; Educational Side of 'Farm Life, Mrs. M. L. Copeland, Marion; song; social evolution, T. C. Clendennin, Cairo; adjournment.

Wednesday, November 28, 1900. Ladies' session—10:30 o'clock.

Song; prayer, Rev. W. G. Shower, Eldorado; Home Influences, Mrs. M. L. Copeland, Marion; Order in the Home, Mrs. J. M. Clark, Sparta; Question Drawer, Mrs. H. S. Anderson, Harrisburg.

Afternoon session—1:30 o'clock.

Song; business meeting; What Clover, Cow Peas and Soja Beans will do for a worn out farm, and a discouraged farmer, Robt. C. Morris, Olney; Horticulture, John Odum, Carrier Mills; Practical Questions, W. O'Neill, Eldorado.



Z. W. Young, Francis Mills, Ill.

Average daily attendance, 75. Cost of Institute, \$75.00.

Officers elected for the ensuing year—President, Hex. Bramlet, Eldorado, Ill.; secretary, H. S. Anderson, Harrisburg, Ill.; treasurer, J. B. Warren, Eldorado, Ill.

SANGAMON COUNTY FARMERS' INSTITUTE,

Held at Wineman's Hall, Auburn, Ill., Tuesday, Wednesday and Thursday, October 16, 17, and 18, 1900.

Officers—President, B. F. Workman, Auburn; Vice-President, E. D. Boynton, Pleasant Plains; Secretary, James A. Stone, Bradfordton; Treasurer, L. H. Coleman, Springfield.

Executive Committee—Charles F. Mills, Springfield; J. F. Smith, Auburn; J. F. Bird, Mechanicsburg; Ira Knight, Williamsville; E. D. Boynton, Pleasant Plains; Mrs. J. F. Smith, Auburn; Mrs. E. F. Iles, Springfield.

Tuesday, October 16. 10:00 o'clock a. m.

Music; prayer; address of welcome, B. F. Workman, Auburn; response, James A. Stone, Bradfordton; president's address, B. F. Workman, Auburn; report of secretary, James A. Stone, Bradfordton; report of treasurer, L. H. Coleman, Springfield; report of delegates from various townships as to the crop and other agricultural conditions of the county; question box.

Afternoon session, 1:30 o'clock. Woman's session; Mrs. J. F. Smith, President Sangamon County Domestic Science Association, in the chair.

Music, "Praise God for Whom All Blessings Flow"; prayer, Mrs. B. F. Workman; address of welcome, Mrs. J. F. Smith; response, Mrs. E. A. Sterling; music, mandolin and guitar; Architecture of the Farm Home, Mrs. Eva Bigler; discussion, Mrs. Chas. Gibson, Miss Ella Brown; House Furnishing from Kitchen to Parlor, Mrs. Mildred Iles; discussion, Mrs. H. Dawson, Mrs. Geo. Hutton; music, vocal, Ladies' Quartette; music, violin solo, Mrs. B. Hutton; report of our delegate to the State Fair Domestic Science School, Miss Elizabeth Hoerner; recitation, Miss Hattie Harris; The Family Table, Miss Jennie Hill; discussion, Mrs. B. F. Workman, Mrs. H. Landon; music, mandolin and guitar; Home Surroundings, Mr. A. Kessler; discussion, Mrs. Eva Springer; The Girl on the Farm, Miss Mary Brown; discussion, Mrs. Will Black, Mrs. Ezra Barnes; music, solo, Miss Claire Bessie Gates; Homemaking from a Social Standpoint, Miss Ella McGill; discussion, Mrs. Thos. McMurray; music.

Evening session, 7:30 o'clock.

Music; The Country School, Hon. Alfred Bayliss, Springfield, State Supt. of Public Instruction; The College of Agriculture, Prof. Eugene Davenport, Urbana, Dean College of Agriculture; The Country Church, Rev. David G. Bradford, Springfield.

Live Stock session.

Music; prayer, Rev. S. P. Haywood; Balanced Ration for Dairy Cows, Prof. W. J. Kennedy, State Agricultural College, Urbana; discussion; Feeding Beef Cattle, J. T. Foster; Elkhart; discussion; The Profitable Horse, S. C. Wagener, Pana; discussion; The Hog, William H. Rowe, Jacksonville; discussion; question box.

Afternoon session, 1:30 o'clock. Horticultural session.

Music; The Farm Orchard, Henry Augustine, Normal; discussion; Small Fruit for the Farm, H. A. Wood, Petersburg; discussion; The Varieties of Fruit for Sangamon County Farm, B. F. Buckman, Farmingdale.

Evening session, 7:30 o'clock. Educational session.

Music; Farm Telephones, Frank H. Rankin, Athens; discussion; music; Rural Electric Railway, Charles A. Denham, Chicago; discussion; music; The Farmers' Club, Mr. A. D. Schamel, Urbana.

Thursday, October 18. Morning session, 9:00 o'clock.

Music; prayer; Rural Free Delivery, John Upton, Springfield; Country Roads, Howard H. Gross, Chicago; discussion; How to Secure Hard Roads, A. M. Brooks, Springfield; discussion.

Afternoon session, 1:30 o'clock.

Music; The Agricultural College Student, F. W. Ladage, Woodside; music; Butter Making, Mrs. Eva M. Springer, Springfield; music; How and What to See, Dr. Arthur E. Prince, Springfield; adjournment.

Average daily attendance, 500; cost of institute, \$30.55.

Officers elected for the ensuing year—President, E. D. Boynton, Pleasant Plains, Ill.; Secretary, James A. Stone, Springfield, F. R. D. No. 4; Treasurer, L. H. Coleman, Springfield, Illinois.

SCHUYLER COUNTY FARMERS' INSTITUTE.

Held at Court House, Rushville, Ill., Thursday and Friday, November 22 and 23, 1900.

Officers—Charles M. Doyle, president, Rushville; John M. Bolce, secretary, Rushville; J. Walter Whitson, Rushville.

Program—Thursday, November 22. Morning session—10:00 o'clock.

Invocation; music; receiving and arranging exhibits.

Afternoon session—1:30 o'clock.

Music; Orchard and Garden, Geo. M. Mason, Rushville; The Farm Home and Higher Education for Women in Regard to Home Making, Miss Lina Brenneman, Minier; music; Corn Culture, E. S. Fursman, El Paso.

Evening session—7:30 o'clock.

Music; address, Hon. G. W. Dean, Adams; music; Fredrick Quartette; recitation, Jas. Kane, Fredrick; recitation, Carl Whitson, Rushville; Fredrick Quartette; recitation, Miss Lina Brenneman, Minier; music.

Friday, November 23. Morning session—9:30 o'clock.

Music; The Farmer Boy, Herman Brown, Rushville; Is Oats a Profitable Crop, discussion, opened by Jas. A. Teel, Rushville; music; address, Should Agriculture be Taught in Our Public Schools, Supt. of Schools L. J. McCreery, Rushville; music.

Afternoon session—1:30 o'clock.

Music; The Breeding and Management of Swine, G. A. Willmarth, Seneca; question box; address, The Cow Pea, L. F. King, Huntsville; address, "Country vs. Town Life," Mrs. Wm. Moench.

Average daily attendance, 300. Cost of institute, \$47.85.

Officers elected for the ensuing year—President, Charles M. Doyle, Rushville, Ill.; secretary, John H. Bolce, Rushville, Ill.; treasurer, J. Walter Whitson, Rushville, Ill.



J. H. Bolce, Rushville, Ill.

SCOTT COUNTY FARMERS' INSTITUTE,

Held in the Court House, Winchester, Ill., Wednesday and Thursday, December 12 and 13, 1900.

Officers—President, Hon. Henry Miner, Winchester; secretary, Geo. R. McLaughlin, Winchester; treasurer, John W. Taylor, Winchester.

Reception Committee—Charles Anderson and Edward Coultas.

Executive Committee—James T. Wilson, George Hagan, W. C. Gibbs, George R. Hawk and Henry Bell.

Program, Wednesday, December 12. Morning session—10:00 o'clock.

Invocation, Rev. W. H. Breach, Winchester; address of welcome, Rev. W. F. Gilmore, Winchester; response, Hon. Henry Miner, Winchester; Class in Corn Judging, Prof. A. D. Shamel, Urbana; appointment of committees.

Afternoon session, 1:00 o'clock.

How to Improve Corn, Prof. A. D. Shamel, Urbana; Shredded Corn Fodder for Stock, Hon. T. S. Chapman, Jerseyville; Corn—Quality and Judging, Prof. A. D. Shamel, Urbana; questions and discussions on all topics.

Evening session, 7:30 o'clock.

Music; Domestic Economy, Mrs. J. A. McKeene, Winchester; music; Village Improvement, Mrs. David Hainsfurther, Winchester; music; address, Agriculture for the Common Schools of Illinois, Prof. Frank H. Hall, Jacksonville; music.

Thursday, December 13. Morning session—9:30 o'clock.

Clover, Dr. Henry Wallace, Des Moines, Iowa; Feeding and Grazing Cattle for Profit, John G. Imboden, Decatur.

Afternoon session, 1:00 o'clock.

The Wasting of Soil by Washing, M. B. Ross, White Hall; Cattle Raising, Dr. Henry Wallace, Des Moines, Iowa; questions and discussion on all topics.

Evening session, 7:30 o'clock.

Music; address, Rents, Dr. Henry Wallace, Des Moines, Iowa; music.

Average daily attendance, 105. Cost of Institute, \$62.40.

Officers elected for the ensuing year—President, J. T. Wilson, Winchester, Ill.; secretary, Thos. J. Priest, Winchester, Ill.; treasurer, Richard Coulters, Winchester.

SHELBY COUNTY FARMERS' INSTITUTE.

Held in the Court House, Shelbyville, Ill., Wednesday and Thursday, October 10 and 11, 1900, and at Tower Hill, Ill., January 29 and 30, 1901.

Officers—President, W. E. Killam, Tower Hill; Secretary, J. E. Christman, Shelbyville; Treasurer, Wm. Middlesworth, Shelbyville.

Program—Wednesday, October 10.

10:00 a. m., opening exercises; 10:30 a. m., Raising and Marketing Potatoes, E. W. Burroughs, Edwardsville; 1:30 p. m., How I Feed and Care for my Cows Milked for the Creamery, J. P. Heinz and P. A. Mautz; 2:30 p. m., address; 7:30 p. m., What I saw of the Peasantry and Farming in Europe, Clark Dove; The Institute as an Educator, Prof. E. Davenport.

Thursday, October 11—10:00 a. m.

Horse Training, Prof. Davenport; Poultry Raising, C. F. W. Alwardt.

Domestic Science Session—1:30 p. m.

Paper and report of the State Fair Cooking School, Miss Alta Dove; recitation; address, Mrs. H. M. Dunlap.

Tuesday, January 29—10:00 a. m.

Music; Farm Telephone, Arthur Ware, Butler; discussion, E. M. Harwood, Shelbyville; music; The Farmer His own Veterinary Surgeon, T. B. Newby, Pana.

Afternoon session—1:30 o'clock.

Song; Raising and Marketing Potatoes, E. W. Burroughs, Edwardsville; Fruit Growing, C. M. Sargent, Windsor; song, Tower Hill school; Truck Gardening, G. W. Grisso, Tower Hill; election of officers.

Evening session—7:00 o'clock.

Music; The Most Valuable Product of our Farms, G. P. Randle, Supt. Shelbyville Schools; Some Few Principles and Facts Relative to Good Health, Dr. Eddy, Shelbyville; The University of Illinois and its Students, Alberta Jenkins.

Wednesday, January 30—10 a. m.

Horticulture on the Farm, Henry Augustine, Normal; questions; The Most Valuable Horse for the Farmer, Philip Mautz, Tower Hill.

Afternoon—Domestic Science Session—1:30 o'clock.

Song: president's address; **report of secretary;** demonstration of whole wheat biscuit, Mrs. Geo. R. Graybill, Shelbyville; **paper—Seeds for Spring Gardening;** demonstration of mush bread, Miss Alta Dove, Tower Hill; **recitation,** Miss Lochia Truitt; **report of Shelbyville Domestic Science Club.**

Average daily attendance, first meeting, 75; second, 200. Cost of first Institute, \$34.65; second, \$37.60.

Officers elected for the ensuing year—President, W. E. Killam, Tower Hill, Ill.; Secretary, S. B. Carr, Shelbyville; Treasurer, W. S. Middlesworth, Shelbyville.

ST. CLAIR COUNTY FARMERS' INSTITUTE,

Held in Liederkrantz Hall, Belleville, Ill., Thursday and Friday, Dec. 6 and 7, 1900.

Officers—President, Hon. Jos. E. Miller, Belleville; secretary, Laura Patterson, Belleville; treasurer, George Daab, Smithton; director, Walter R. Kinzey, Tamaroa.

Program, Thursday, December 6. Morning session—10:00 o'clock.

Music; address by president, Jos. E. Miller, Belleville; **Orcharding, Supt. Chas. Hertel, Belleville; discussion; question box.**

Afternoon session, 1:00 o'clock.

Music; **Dairying Up-to-Date Methods, Euclid N. Cobb, Monmouth; discussion; Fertility of the Soil, Miss Blanch Smith, Freeburg; discussion; question box.**

Evening session, 7:30 o'clock.

Music; We've Always Been Provided For, Miss Adolphoena Moeser, Smithton; declamation; music; Domestic Science, Mrs. S. Rose Carr, Lis.

Friday, December 7. Morning session—10:00 o'clock.

Music; Type and Quality of Farm Stock, A. P. Grout, Winchester; discussion; Farmer as a Business Man, Frank Moore, Chester; discussion; question box; Good Roads, H. H. Gross, Chicago.

Afternoon session, 1:00 o'clock.

Music; transaction of business; farm sanitation; discussion; question box.

Average daily attendance, 150. Cost of Institute, \$72.19.

Officers elected for the ensuing year—President, G. C. Patterson, Belleville; secretary, A. O. Metzler, Floraville, Ill.; treasurer, E. S. Holms, Belleville, Ill.



Laura Patterson, Belleville, Ill.

STARK COUNTY FARMERS' INSTITUTE.

Held at Toulon, Ill., in the Town Hall, December 13 and 14, 1900.

Officers—M. Bevier, president, Bradford; W. P. Snare, secretary and treasurer, Toulon.

Program—Thursday, December 13. Morning session—10:00 o'clock.

Arranging exhibits and miscellaneous business.

Afternoon session—1:00 o'clock.

Prayer; opening address, Dr. W. T. Hall, Toulon; Our Public Roads, R. S. Snare, Castleton; Soil Fertility, What It Is, Where It Comes From and Where It Goes To, Prof. P. G. Holden, Pekin; Growing and Selecting Corn, Henry Perry, Toulon.

Friday, December 14. Morning session—10:00 o'clock.

Raising and Feeding Cattle for Profit, Winfield Scott, Wyoming; Dairy Farming, J. N. Conger, Wyoming; Farming Impediments, J. C. Blaisdell, Bradford.

Afternoon session—1:00 o'clock.

Sheep Husbandry, R. J. McCahon, Orion; The Farmer and Education, Cyrus Bocock, Bradford; Agricultural Education in Our Public Schools, G. O. Frank, County Supt. of Schools, Toulon; Farm Life and Farmers' Daughters, Miss M. C. Perry, Toulon.

Evening session—7:00 o'clock.

The Township High School, W. R. Sandham, Wyoming; Discussion. Led by Prof's. Morrow and Darling, Toulon; Report of Delegate to State Fair Cooking School, Miss Trella Dewey, Toulon; Teaching Domestic Economy, Mrs. N. S. Kedzie, Peoria.

Average daily attendance, 200. Cost of institute, \$58.90.

Officers elected for the ensuing year—President, Winfield Scott, Wyoming, Ill.; secretary and treasurer, W. R. Sandham, Wyoming, Ill.

Had an exhibit of Farm and Domestic Products.

STEPHENSON COUNTY FARMERS' INSTITUTE,

Held at Freeport, January 16 and 17, 1901.

Officers—President, W. C. Swansey, Freeport; Secretary, J. A. Phillips, Damascus; Treasurer, F. B. Walker, Cedarville.

Program—First day, Wednesday, Jan. 16. Morning session.

Opening song; prayer, Rev. C. E. Dunn, Freeport; president's address, W. C. Swansey, Freeport; song, "When the Snow-flakes Flutter Low," Bolton Quartette; appointment of committees; How to Secure Farm Help, S. M. Mulnix, Damascus; discussion; recitation, "The Fire," R. J. Spiller; Breeding and Management of the Flock, Homer Hitchcock, Madison, Wis.; discussion, D. Cotherman; song, Bolton and Ridott Quartettes.

Afternoon session.

Opening song, double quartette; Feeding and Fattening Lambs, D. S. Mackay, Mt. Carroll; discussion; recitation, Carrie McConnell, Ridott; Agricultural Education, G. A. Willmarth, Seneca, Ill.; duet, Mrs. C. F. Warner and Ellis Goodsell; Profit and Loss on the Farm, E. D. Herbert, Freeport; The Man in the Home, Mrs. G. W. Shippy, McConnell; The Science that a Farmer Should Acquire, E. R. Wolf, Freeport; The Farmers' Creamery, J. A. Phillips, Damascus.

Evening session.

Song; address, Recent Farmers' National Congress, W. L. Ames, Oregon, Wis.; song, Kitchen Conveniences, Miss Ada Blakeway, Ridott; song; paper by Wm. Kigney, Damascus; recitation; duet.

Morning session, Jan. 17.

Farm Dairy, Frank Shepherd, Freeport; Feeding Dairy Cattle, H. B. Erb, Freeport; My Experience with Silo, A. F. Graham, Harrison.



J. A. Phillips, Damascus, Ill.

Afternoon session.

Opening song, Dakota Quartette; Small Fruits, Leguminous Plants, J. L. Hartwell, Dixon; discussion, Z. T. Turner, Elervy; solo; Bread, Mrs. Helen Armstrong, Chicago; recitation, Agnes Hunt, Ridott; song, Dakota Quartette; question box; closing song.

Average daily attendance, 400; cost of institute, \$91.17.

Officers elected for the ensuing year—President, J. A. Phillips, Damascus, Ill.; Secretary, E. D. Herbert, Freeport; Treasurer, F. B. Walker, Cedarville.

TAZEWELL COUNTY FARMERS' INSTITUTE AND 14TH CONGRESSIONAL DISTRICT INSTITUTE.

Held at the Opera House, Minier, Illinois, Tuesday, Wednesday, and Thursday, February 5, 6 and 7, 1901.

Officers—District Director, Oliver Wilson, Magnolia; President, Ralph Allen, Delavan; Vice-President, J. F. Beal, Minier; Secretaries, R. C. Cridfield, S. S. Tanner, Minier; Treasurer, John Betzelberger, Boynton.

Program—Tuesday morning.

Call to order at 9:30; song, "America" by the audience; prayer, Rev. Geo. W. McConkey; address of welcome, S. S. Tanner; response, President Ralph Allen, Delavan; music; address, District Director Oliver Wilson, Magnolia.

Tuesday afternoon.

Concert by Minier band, 1:00 to 1:30; recitation, "Kentucky Belle," Miss Hannah Sands, Hopedale; The Sugar Beet industry in Tazewell County, R. S. Woodrow, Green Valley; discussion led by Val Graff; vocal duet, The Accomplished Young Lady, Misses Leta Britton and Mamie Shay, Hopedale; The Age of Education, Henry Griesemer; How to Improve Corn, J. L. Reid, Delavan; discussion led by J. W. Walters, Tazewell; song, "Every American Girl is a Queen," Miss Nellie Koelofson, Hopedale; Management of the Corn Fodder Crop, C. C. McCutcheon, Norris; discussion, led by W. E. Ferry, Stanford, Ed. Dixon, Armstrong; question box.

Tuesday evening—7:30 o'clock.

Song, male quartet; address—Agriculture in the Public Schools, M. Bollen, Superintendent of Schools, Mason county; song, Miss Carrie Fressler; The Little Things of Life, Miss Lina Brennemann; duet, Misses Bessie Lower and Pearl Hainline; The Farm in Literature, Jay W. Knight.

Wednesday morning—9:00 o'clock.

Poultry on the Farm, Mrs. J. W. Walters, Tazewell, and Ira Cottingham, Eden; discussion, led by Harry Thomas, Mrs. Ed. Dixon; music; Stock Judging, by Prof. W. J. Kennedy of the University of Illinois, with practical illustrations of points of excellence. (Stock was on exhibition for this purpose.)

Wednesday afternoon.

Ladies' session—Miss Lina Brennemann, presiding.

Music, Minier band; piano solo, Tarantelle, Op. 13, (Nicode), Miss Minnie Brennemann, Hopedale; report of the Domestic Science School during the State Fair at Springfield, Miss Edna Heaton, Delavan; recitation, Miss Fern Haning; address—Some Points of Law that Every Woman Should Know, Emma R. Strawn, Lacon; song, Mrs. R. E. Black and Miss Alice Glotfelter; discussion, The Farmer and the Telephone, Frank Morford, followed by Miss Jennie Briggs, O. J. Brennemann and others; address—The Farmer and His Home, Chas. E. Himmel, Bishop, president Mason County Farmers' Institute; recitation, Adella Kunce; recitation—"An Old Man's Story," Mrs. W. H. B. McCormick, Hopedale; piano solo, waltz in E minor (Chopin) Miss Minnie Brennemann.

Wednesday evening.

Ladies' session—Miss Edna Heaton, Delavan, presiding.

Piano duet, Misses Stella Elliff and Ottella Buehrig; paper—Child Training, Mrs. Rule Reed; address—If I Were a Man, Mrs. W. H. B. McCormick; address—If I Were a Woman, Jay W. Knight; song, Mrs. R. E. Black and Miss Alice Glotfelter; paper—The Honest Farmer, Miss Bertha Graff; piano duet, Misses Stella Elliff and Ottella Buehrig.

Thursday morning.

Selection and Care of Farming Implements, Prof. Fred R. Crain, University of Illinois; discussion, led by J. H. Henderson and W. M. Shreve; music; business session.

Thursday afternoon.

Music, Minier band; Fertility of the Soil—What is it? Where does it go? How restored? Prof. P. G. Holden; discussion and questions answered; song, Miss Minette Frank; A Farmer's Strawberry Bed, H. D. Wertz, Hopedale; Partnership on the Farm, Mrs. Jennie Barlow, Bloomington; piano solo, waltz (Moszkowski), Miss Alice Glotfelter; Farming in Ireland, J. F. Beal; music.

Average daily attendance, 425. Cost of Institute, \$35.45.

Officers elected for the ensuing year—President, Ralph Allen, Delevan; Secretary, W. H. Smith, Hopedale; Treasurer, John Betzelberger, Boynton.

Had a large exhibit of farm and domestic products.

UNION COUNTY FARMERS' INSTITUTE,

Held at City Hall, Anna, Ill., Friday and Saturday, November 30 and December 1, 1900.

Officers—President, A. Ney Sessions, Anna; secretary, George Barringer, Jonesboro.

Program, Friday, November 30. Morning session—10:00 o'clock.

Music; prayer; address of welcome, President A. Ney Sessions; music; Poultry Raising, W. T. White, Cutler; J. B. Fitch, Cobden; discussion.

Afternoon session, 1:30 o'clock.

Music; Tomato and Melon Culture, E. R. Jenette, Anna; discussion, P. A. Sifford, Anna; recitation; music; fruit, J. W. Fuller, Anna; discussion, Caleb Miller, Anna; Ed Leib, Balcom; Hired Help on the Farm, W. T. White, Cutler; discussion, Dick Baygot, Anna; music.

Evening session, 7:00 o'clock.

Music; recitation, John Galbraith, editor "Farmers' Institute," Carbondale; The Farmer and Education, T. C. Clendennin, Supt. City Schools, Cairo; music; recitation; report Domestic Science Cooking School, State Fair, Mrs. H. G. Easterly, Carbondale; Organization Domestic Science.

Saturday, December 1. Morning session—10:00 o'clock.

Music; Hogs, William H. Rowe, Jacksonville; discussion, L. J. Hess, Anna; Good Roads and How to Get Them, U. S. Com. H. H. Gross, Chicago; music; Winter Wheat, W. T. White, Cutler. discussion.

Afternoon session, 1:30 o'clock.

Music; election of officers; Sweet Potato Culture, D. H. Rendleman, Jonesboro; Animal Types (Illustrated), instructor in animal husbandry, Agricultural College, Urbana; Corn, William H. Rowe, Jacksonville; music.

Average daily attendance, 70. Cost of Institute, \$35.70.

Officers elected for the ensuing year—President, L. J. Hess, Anna, Ill.; secretary, Geo. Barringer, Jonesboro, Ill.; treasurer, D. W. Karraker, Jonesboro, Ill.



(Geo. Barringer, Jonesboro.

VERMILION COUNTY FARMERS' INSTITUTE AND 12TH CONGRESSIONAL DISTRICT FARMERS' INSTITUTE.

Held at Rossville, Ill., Tuesday and Wednesday, February 5 and 6, 1901.

F. I. Mann, Gilman, Director for 12th District.

Officers of Vermillion County Institute—George W. Hobson, president, Homer; E. R. McConnell, vice-president, Hoopeston; J. H. Oakwood, secretary, Danville; D. M. Fowler, treasurer, Danville.

Executive Committee—William M. Bines, Ridge Farm; O. P. Stuffbeame, Rossville; James Clipson, Catlin; U. Grant Fowler, Hope, and W. G. Herron, Allerton.

Program—Tuesday, February 5. Morning session—9:00 o'clock.

Opening prayer; address of welcome, O. P. Stuffbeame, Rossville; response, Hon. Geo. W. Hobson, Homer; Swine Husbandry, Thomas Bennett, Rossville; Feeding and Marketing Cattle, John Fogner, Rossville.

Afternoon session—1:30 o'clock.

Poultry Raising, Mrs. Leach, Cheneyville; Mrs. Geo. M. Hanly, Hoopeston; Stock Raising by Farm Tenant, Geo. W. Hobson, Homer.

Evening session—7:00 o'clock.

Domestic Science, Mrs. Nellie Kedzie, Peoria; Mrs. J. J. Southworth, Allerton; Report on State Cooking School, Miss Elvessa Taylor, Catlin; Music in the Home, Mrs. Dr. Mason, Rossville.

Wednesday, February 6. Morning session—9:00 o'clock.

Good Roads, H. H. Gross, U. S. Expert, Chicago; Farm Drainage, Charles Cottingham, Danville; election of officers.

Afternoon session—1:30 o'clock.

Type and Quality of Farm Stock, A. P. Grout, Winchester; Sheep Husbandry, U. Grant Fowler, Hope; Thos. Evans, Hoopeston; Clover Culture, Harvey Bowen, Hoopeston.

Evening session—7:00 o'clock.

Horticulture, L. B. Ellis, Ridge Farm; O. B. Gravat, Snyder; Farming and Stock Raising, Gov. James A. Mount, Indianapolis, Ind. Each topic discussed in 5-minute speeches.



J. H. Oakwood, Danville, Ill.

Average daily attendance, 150. Cost of institute, \$74.81.

Officers elected for the ensuing year—President, Geo. W. Hobson, Homer, Ill.; secretary J. H. Oakwood, Danville, Ill.; treasurer, D. M. Fowler, Danville, Ill.

WABASH COUNTY FARMERS' INSTITUTE,

Held at Mt. Carmel, December 6 and 7, 1900, and at Allendale, February 14 and 15, 1901.

Officers—President, O. H. Woods, Mt. Carmel; Secretary, J. E. Seiler, Sugar Creek; Treasurer, I. W. Jaquess, Mt. Carmel.

Program—Thursday, December 6.

Open with song at 10:00 a. m.; invocation by Rev. J. H. Walterick, chaplain; music; opening address by President O. H. Wood, of Friendsville; music; appointment of committees.

Afternoon session—1:30 o'clock.

Instrumental music; Farm Dairying, by W. T. Grundon, Mt. Carmel; discussion led by Jacob Zimmerman, Mt. Carmel; music; Breeding and Management of Swine, Hon. G. A. Willmarth, Seneca, Illinois; discussion led by Henry Brust, Bellmont; song.

Evening session, 7:30 o'clock, Prof. J. E. Ramsey, presiding.

Song and music; address, Agricultural Education, Hon. G. A. Willmarth, Seneca, Ill.; music; recitation, Fred Kramer, Mt. Carmel; music.

Friday, December 7, Mrs. J. H. Wood, presiding.

Morning session devoted to Domestic Science.

Prayer, by Rev. J. H. Walterick; music; address, Domestic Science, Mrs. L. Beal, Mt. Vernon, Ill.; discussion, led by Miss Lottie Seiler; music; The Country Home, Miss Ethel Lingenfelter; song; paper by Mrs. Thomas Stone; music; election of officers and the transacting of other business.

Afternoon session, Dr. J. C. Utter, presiding.

Queries answered; address, Improvement of Public Roads, Hon. H. H. Gross, Washington, D. C.; music; Some Mistakes in Poultry Raising, J. J. Stone, Mt. Carmel; discussion, A. J. Brees, Mt. Carmel; music; Horticulture on the Farm, Hon. L. N. Beal, Mt. Vernon, Ill.; reports of committees and election of officers.

Program—Thursday, February 14, 1:30 p. m.

Song service; invocation by Rev. A. James; music; address of welcome, Dr. Gilllett; response by O. H. Wood; music; address by Robt. Morris, Olney, Ill.; discussion led by Wm. McFarland; Horticulture, J. Russell Brines, Sr.; discussion; music; organization of precinct institute; music.

Evening session—7:30 o'clock; W. E. Rall, presiding.

Music; address, A. A. Bruner; solo, Mrs. H. A. Fox; Stock Peas, C. F. O. Litherland; discussion led by William Marvel; duet; recitation, Miss Anna Sanders; music; recitation, Miss Lizzie Harrington; quartet; music.

Friday morning, Feb. 15. Domestic Science session, Mrs. J. O. Wood, presiding.

Music; Home Influence on the Young, Miss Nellie Jaquess; discussion; Good Literature in the Home, Mrs. A. M. Booner; music; Economy in Housekeeping, Mrs. Newton Smith; discussion; adjournment of Domestic Science Association.

Breeding and Management of Cattle, I. W. Jaquess; discussion led by W. F. Courter; How to Get the Most Profit from the Raising of Horses on the Farm, James F. Seibert; discussion.

Average daily attendance, 350. Cost of two institutes, \$71.99.

Officers elected for the ensuing year—President, S. S. Seiler, Sugar Creek, Ill.; Secretary, Fred Zimmerman, Mt. Carmel, Ill.; Treasurer, I. W. Jaquess, Mt. Carmel, Ill.

Had an exhibit of farm and domestic products.



J. E. Seiler, Sugar Creek, Ill.

WARREN COUNTY FARMER'S INSTITUTE AND 15TH CONGRESSIONAL DISTRICT,

Held at Opera House, Roseville, Ill., Wednesday, Thursday and Friday, February 13, 14 and 15, 1901.

Hon. G. W. Dean, Quincy, R. D. No. 1, director 15th District.

Officers—President, Eli Dixon, Roseville; secretary, Euclid N. Cobb, Monmouth; treasurer, T. T. McClanahan, Monmouth.



Euclid N. Cobb, Monmouth, "Buff Jersey."

Evening session, 7:30 o'clock. G. W. Dean, chairman.

Music; recitation, Mrs. McMillain, Roseville; discussion; recitation, Miss Louise Anderson, Monmouth; music.

Friday, February 15. Morning session—9:00 o'clock. H. M. Stewart, chairman.

Prayer; music; Farming for Profit, Chas. O. Pinney, Roseville; Cattle Feeding, C. P. Arnell, Monmouth; The Farmers' Garden and Small Fruit Culture, Jno. W. Lloyd, instructor in horticulture, State University, Champaign.

Afternoon session, 1:30 o'clock. Eli Dixon, chairman.

Music; business meeting; Mistakes of Farmers, S. N. Black; Up-to-Date Dairying, E. N. Cobb, Monmouth; music.

Average daily attendance, 350. Cost of Institute, \$105.70.

Officers elected for the ensuing year—President, Eli Dixon, Roseville, Ill.; secretary, Euclid N. Cobb, Monmouth, Ill.; treasurer, Thos. McClanahan, Monmouth, Ill.

Had an exhibit of farm and domestic products and prize essays.

Program, Wednesday, February 13. Morning session—9:00 o'clock. A. R. Stickle, chairman.

Prayer; music; address of welcome, S. W. Tallieferro, Roseville; response, Eli Dixon, Roseville, G. W. Dean, Quincy; Poultry for Profit, Chas. Watson, Roseville, J. Lamphere, Ponema; Clover as a Feed and Fertilizer, J. W. Coghill, Roseville.

Afternoon session. 1:30 o'clock. S. N. Black, chairman.

Music; The Institute—What it Is Doing for the Farmer, G. W. Dean, director 15th Congressional District; Corn Culture, H. T. Lape, Roseville; Silos and Ensilage, illustrated, E. N. Cobb, Monmouth; music.

Thursday, February 14. Morning session—9:00 o'clock. S. D. Notes, chairman.

Prayer; music; Horse Sense in Road Building, J. Ed. Miller, Monmouth; Farm and Sanitary Engineering, Prof. Thos. McClanahan, Monmouth; question box.

Afternoon session, 1:30 o'clock. W. B. Marvel, chairman.

Music; New Farm Life, Prof. W. N. Brown, Roseville; Domestic Science, Mrs. Nellie E. Kedzie, Bradley Institute, Peoria; recitation, Mrt. S. F. Pratt, Roseville; Agricultural Education in Our Schools, Mrs. M. E. Sykes, Monmouth.

WASHINGTON COUNTY FARMERS' INSTITUTE AND 21ST CONGRESSIONAL DISTRICT INSTITUTE.

Held at Nashville, December 19, 20, and 21, 1900.

Officers—President, J. D. Maxwell, Oakdale, Ill.; secretary, M. L. Merker, Nashville, Ill.; treasurer, John Meyer, Addieville, Ill.

Program—Wednesday, December 19, 1900.
Morning session—10:00 o'clock.

Invocation, Rev. Jones; welcoming address, mayor; response, W. R. Kimzey, Tamaroa; How to Raise Two Bushels of Wheat where One Grows Now, John Meyer, Addieville; general discussion.

Afternoon session—1:00 o'clock.

Song; Rotation of Crops—Home Made and Commercial Fertilizers, Joseph McCormighe, Oakdale; discussion; Fertility of the Soil, Jos. E. Miller, Belleville; Corn Culture, How to Raise It; How to Get the Most Out of It; Wm. Miller, Pilot Knob; discussion; Hay as a Money Crop, George Johnpeter, Posey.

Thursday, December 20. Morning session—9:30 o'clock.

Song; invocation, Rev. Schultze; The Horse, Col. J. F. Berry, Chicago stock yards; Swine Breeding, A. S. Miller, Three Mile; discussion; Poultry Raising for Profit, Geo. Ames, Tamaroa; discussion.

Afternoon session.

Song; The Garden and Small Fruits for Home Use, L. N. Beal, Mt. Vernon; discussion; Domestic Science, Mrs. H. M. Dunlap, Savoy; Sheep Raising for Profits, M. E. Dennis, Sparta; Angora Goats and Their Uses, Chas. Moore.

Evening session.

Chorus, Nashville high school; recitation, Miss Mae Hassinger; song ladies' quartette; The Relation that Should Exist Between Country and Town, Prof. A. G. Owen; chorus, Nashville high school; recitation, Walter Hassler; Why we Should Live and Let Live, Prof. Larsh; music.

Friday, December 12. Morning session.

Invocation, Rev. Schmale; song; Cultivation and Pruning of Orchards, J. W. Stanton, Richview; discussion; Spraying, A. V. Schermerhorn, Kinmundy; discussion; Forage Crops, A. A. Hinckley, DuBois.

Afternoon session.

Song; Type and Quality of Farm Stock (illustrated), A. P. Grout, Springfield; discussion; business session.

Average daily attendance, 300; cost of institute, \$125.57.

Officers elected for the ensuing year—President, J. D. Maxwell, Oakdale, Ill.; secretary, M. L. Merker, Nashville; treasurer, John Meyer, Addieville.



M. L. Merker, Nashville, Ill.

WAYNE COUNTY FARMERS' INSTITUTE,

Held at Jeffersonville, Ill., Thursday, Friday and Saturday, November 28, 29 and December 1, 1900.

Officers—W. G. Davis, president; Mrs. R. A. Davis, vice-president; A. R. McDaniels, treasurer; T. M. Hobart, secretary.

Domestic Science Department—Mrs. Kate Whiteaker, president; Mrs. G. F. Morris, secretary.

Executive Committee—W. G. Davis, E. A. Rankin, B. F. Burton, Mrs. G. F. Morris, John King, T. M. Hobart, N. Sidwell.

Program—Thursday, November 29. Morning session—10:00 o'clock.

Meeting called to order by the president; music; prayer, H. D. Brock; The Farmers' Institute and what it does for the Farmers of Illinois, L. N. Beal, district director; questions; Growing and Marketing Red Top, E. A. Rankin; questions and discussion; music; adjourn for dinner.

Afternoon session—1:30 o'clock.

In charge of the Domestic Science Association. Mrs. Kate Whitaker, presided; music; Something About the Domestic Science Association. Mrs. G. F. Morris; questions and discussion; Chickens. Mrs. Samuel Baldwin; questions and discussion; Butter Making on the Farm. Mrs. Kate Whitaker; question and discussion; Home Training. Mrs. Frank Stroll; questions and discussion; Report from the State Fair Cooking School, Miss Sidwell.

Evening session—7:00 o'clock.

Music; Type and Quality in Farm Stock. A. P. Grout; questions and discussion; recitation; Short talks by members of the Institute; each speaker selected his own subject; music.

Friday, November 30. Morning session—9:00 o'clock.

Music; prayer, Elder Logan; Raising and Marketing Corn in Wayne County. J. B. Creighton; questions and discussion; The Swine Industry in Illinois. G. A. Willmarth, President Illinois State Farmers' Institute; questions and discussion; How to Educate Your Children. Prof. J. M. Hill, Jefferson County; questions and discussion.

Afternoon session—1:30 o'clock.

Music; report of president; report of treasurer; report of secretary; election of officers; The Farmers' Institute a Part of Our Educational System. John P. Stelle, Dahlgren; questions and discussion; awarding of premiums, list was read by the secretary; The Relation of the Traveling Salesman to the Merchant and His Business. W. H. Foster, Fairfield; questions and discussion; Good Roads and the Farmer; volunteer talks and discussion.

Evening session—7:00 o'clock.

Music; reading prize essays; questions and discussion; Raising, Breeding, Training, Feeding and Management of Horses. John Billington, Bedford; questions and discussion; volunteer recitations and short talks.

Saturday, December 1. Morning session—9:00 o'clock.

Music; Male Quartette; prayer, Rev. King; Canker Worm. I. L. Garrison, Fairfield; questions and discussion; What We Teach in Our Country Schools, Miss Mary E. King, Fairfield; questions and discussion; music, Clover Leaf Quartette; How to Keep the Boys on the Farm. Charles Burton, Cisne; questions and discussion.

Afternoon session—1:30 o'clock.

Music; Male Quartette; address, C. M. Parker, Taylorville; questions and discussion; address, Plant Growth, Prof. T. J. Burrill, Urbana; questions and discussion; Culture of Our Boys and Girls, W. G. Cisne, Fairfield; questions and discussion.

Evening session—7:00 o'clock.

Solo, Miss Mary Carrothers, Fairfield; Three Phases of Education, Prof. Robert Pifer, Cisne; questions and discussion; music, John G. Stelle, Dahlgren; questions and discussion; short volunteer talks in the interest of farmers and people who labor; singing of doxology by the audience; benediction, Elder Logan.

Average daily attendance, 300. Cost of institute, \$75.00.

Officers elected for the ensuing year—President, A. E. Rankin, Fairfield, Ill.; secretary, G. F. Beck, Jeffersonville; treasurer, B. F. Burton, Cisne.

WHITE COUNTY FARMERS' INSTITUTE.

Held at Carmi, November 13 and 14, 1900.

Officers—President, Ezekiel Runzinger, Carmi, Ill.; secretary and treasurer, Daniel Berry, Carmi, Ill.

Program—Tuesday morning.

Invocation, Rev. D. Manley; address of welcome, H. Crozier, mayor; response, L. N. Beal, Mt. Vernon, Ill., director 20th district; Farm Drainage, Major M. W. Spencer; discussion.

Tuesday afternoon.

Corn Culture; discussion led by Hon. E. S. Fursman, El Paso, Woodford county, Ill.

Wednesday morning.

Invocation, Rev. T. A. Taylor; Stock Breeding—Cattle, Hon. T. G. Imboden, Decatur, Ill.; The Horse, Hon. Geo. H. Madden, Mendota.

Wednesday afternoon.

Baby show and awards by the judges; Good Roads; discussion led by Hon. H. H. Gross, Chicago, special agent and expert office Public Road Inquiries, U. S. Department of Agriculture; election of officers.

Average daily attendance, 500. Cost of institute, \$75.00.

Officers elected for the ensuing year—President, John W. Wies, Phillipstown, Ill.; Secretary and treasurer, Daniel Berry, Carmi, Ill.

WHITESIDE COUNTY FARMERS' INSTITUTE]

Held at Prophetstown, December 4 and 5, 1900.

Officers—President, George A. Potter, Denrock, Ill.; Vice-President, George Talcott, Spring Hill; Secretary, W. J. Johnston, Morrison; Assistant Secretary, W. S. Groff, Morrison; Treasurer, S. R. Hall, Morrison.

Program—Hour of opening, 10 a. m.

Music, "Flow Gently, Sweet Afton," sung by all; prayer, Rev. R. W. Purdue; minutes of last meeting, Secretary W. J. Johnston; Sheep Raising. The kinds to raise. (b) How to feed and properly care for. (c) When to market wool and sheep with profit, E. J. Currier, Montmorency; A. M. Pratt, Fenton; Mallory Hill and George Warner, Prophetstown; discussion.

Afternoon session—1:30 o'clock.

Music, pupils of Miss Grace R. Terry's room, Prophetstown school; recitation, Esta Gage, Benton street school; The Soil. How to preserve its fertility. (b) How to restore worn out soil. (c) The proper rotation of crops in this latitude to keep the soil in good condition, Prof. Henry Wallace, editor of Wallace's Farmer, Des Moines, Ia.; general discussion led by Charles W. Mitchell, Mt. Pleasant; recess.

Music, Prophetstown High School pupils; recitation, Marcia Martin, Portland school; My Trip to the Farmers' National Congress, C. A. Wetherbee, Sterling; The Fence I Like Best, A. D. Stanley, Geneseo; general discussion; "Home, Sweet Home," sung by all.

Evening session—7:30 o'clock.

Music, "Tis Break of Day," W. F. Heath; choir of the Congregational church; recitation, James Anderson; Some of the Ways in Which Our Ungraded Schools Might be Improved, Mrs. Elizabeth Ballard, Mrs. Milton Woodward and N. M. Crook; general discussion; music, "A Song of the Four Seasons," Mrs. C. W. Fenn; Poultry, kinds to raise. (b) How poultry raising may be made profitable to the general farmer, Mrs. Graham Thompson; general discussion; music, "The Dawn," Samuel Reay; choir of the M. E. Church; recitation, Hattie Hill, Prophetstown school; Advice to Young Married People about to Start in Life for Themselves on a Farm, Prof. Henry Wallace; recitation, Ray Schryver, Prophetstown school; music, "Night," A. Ergmann; choir of the Congregational Church.

Wednesday session, 9:20 a. m.

Music, by pupils of Miss Mary Harger's room; prayer, Rev. J. R. Creighton; election of officers; business matters; Cattle. Best kinds for the general farmer to raise. (b) Breeding, feeding and care of. (c) Hints on how and when to market cattle, E. J. McCahon, Orion, Illinois; J. H. Coolidge, Galesburg; Chas. Sturtevant, and Warren E. Reynolds, Prophetstown; general discussion. Recess. Recitation, pupil of Lancaster school; Corn. Good kinds for this section. (b) Saving seed. (c) Preparation of the ground and planting. (d) Care of the same, Prof. P. G. Holden, Pekin; William Cabot, E. L. Sholes, and N. B. Brown, Prophetstown; general discussion.

Afternoon session—1:30 o'clock.

Music, pupils of Miss Margaret Hax's room; recitation, pupil of Prairieview school; Peculiarities in the Farm Season of 1900 and Lessons to be Gained from the Same, Thurston Adams, Garden Plain, and J. L. Lamont, Prophetstown; Hogs. Kinds to raise. (b) Breeding, feeding and care of the same. (c) Prevention and cure of diseases of the hog. (d) Market hints, Prof. Henry Wallace, S. M. Cox, Prophetstown; Geo. E. Goodenough, Union Grove; and Edward Lancaster, Prophetstown; general discussion. Recess. Music, Prophetstown High School pupils; recitation, Loisa McKenzie, Jackson street school; Partnership on the Farm. Do husband and wife share equally the work, responsibilities, pleasures and profits of the farm? (b) If not, how can the matter be helped? general discussion, introduced by Mrs. Celestia Thompson and Mrs. Edward Cleaveland of Prophetstown; closing words by President Geo. A. Potter and others; music, "Auld Lang Syne," sung by all, Mrs. C. W. Fenn, leading.

Average daily attendance, 350. Cost of Institute, \$75.00.

Officers elected for the ensuing year—President, J. H. Mosher, Prophetstown; Secretary, W. J. Johnston, Morrison; Treasurer, S. R. Hall, Morrison.

WILL COUNTY FARMERS' INSTITUTE,

Held in the Opera House, Joliet, Ill., Thursday, Friday and Saturday, January 10, 11 and 12, 1901.

Officers—President, J. H. Alexander, Romeoville, R. D.; secretary, Merton G. Van Horn, Plainfield, R. D.

Vice-Presidents—D. K. Gaskill, Channahon; John O'Mier, Crete; J. J. Smillie, Custer; J. Gordon, Dupage; Daniel Maus, Frankfort; J. T. Dixon, Florence; D. Drummond, Green Garden; Horace Messenger, Homer; E. H. Lichtenwalter, Jackson; George Gurney, Joliet; James Milline, Lockport; Matthew Boylan, Manhattan; August Bochel, Monee; Chas. Francis, New Lenox; Frank Baumgartner, Peotone; R. B. Graves, Plainfield; Eugene Bronk, Troy; A. F. Wilke, Washington; T. J. Neese, Wesley; Daniel Patterson, Wheatland; H. Theisfeldt, Will; M. N. M. Stewart, Wilmington; Andrew Murdie, Wilton; Frank Kelly, Reed.

Program, Thursday, January 10, 1901. Morning session—9:30 o'clock.

Music, Anphion Quartette; prayer; address of welcome, Hon. John B. Mount, Joliet; response, Mr. Frank Sprague, Joliet; Power of the Farmer; Mr. W. B. McGrath, Manhattan; Achievements of a Century, Mr. E. L. Wilson, Manhattan; Cheapest and Most Reliable Fence, Mr. W. J. Adam, Joliet; recitation, Miss Lydia Hansen; Green Garden; Relative Profit of Stock Farming and Dairying, Mr. James Milne, Lockport.

Afternoon session.

Music; Wide Tires and Good Roads, Mr. Charles Bardwell, 'Wilmington'; vocal solo, Miss Grace Patterson, Plainfield, R. D.; The Future of Agriculture, Hon. J. M. Thompson, Joliet; declamation, Master Robert C. Clow, Plainfield, R. D.; Ensilage, Hon. C. D. Holt, Ranney, Wis.; Importance of Early Religious Training for Children, Rev. M. B. McNutt, Plainfield, R. D.

Friday, January 11, 1901. Morning session—9:30 o'clock.

Music; prayer; What Has the Institute Done for the Corn Crop of the County, Mr. John Frazer, Lockport; vocal solo, Mrs. Lizzie Eddy Osgood, Lockport; Rural Free Delivery, Mr. Jonathan Mather, Joliet; recitation, Miss Jessie Frazer, Lockport; Influence of the Institute as Viewed from City Standpoint, Hon. G. L. Vance, Joliet.

Friday afternoon.

Mrs. John Barker, president; Miss Addie McClure, Manhattan, secretary.

Prayer; music; solo, Rev. Charles Hodge, New Lenox; declamation, Robert Tapp, Manhattan; Equal Opportunities, Miss Marie C. Brehm, superintendent of Franchise Dept., National W. C. T. U.; Elements of Soil Fertility, Prof. Cyril G. Hopkins, Urbana, Ill.; Our Country Schools, Miss Sarah Parr, Lockport.

Saturday, January 12, 1901. Morning session—9:30 o'clock.

Prayer; music, "Old Glory" Quartette; Grass, Mr. Dayton Hutchinson, Joliet; Use of Public Highways by Corporations, Hon. A. F. Mather, Joliet; discussion by Messrs. Coldwater, Van Dusen and Spangler; vocal solo, Miss Carrie Foss, Plainfield; recitation, Miss Gertrude Jarman, Plainfield, R. D.; Opportunities of Young Men, Hon. Jabez Harvey, Wilton Center; cornet solo, Mr. J. P. Browne, Plainfield; What I Saw in Europe, Hon. John Stewart, Elburn, Ill.; award of premiums announced.

Saturday afternoon.

Opening hymn, "America"; Will Dairy Interests be Benefited by Discontinuing the Coloring of Butterine? Hon. Amos Savage, Marley; The Rank of Farming Among the Vocations of Mankind, Hon. D. H. Darling, Joliet; recitation, Miss Elnora Wolf, Wolf's Crossing; How to Increase Rural School Efficiency, Mr. Samuel Houston, Joliet; election of officers; closing hymn, "Auld Lang Syne."

Average daily attendance, 1,800. Cost of institute, \$409.75.

Officers elected for the ensuing year—President, J. H. Alexander, Romeoville; secretary, Robert E. Tapp, Manhattan.

Had an extensive exhibit of farm and domestic products.

WILLIAMSON COUNTY FARMER'S INSTITUTE,

Held in the Court House, Marion, Ill., October 19 and 20, 1900.

Officers—President, W. M. Reid, Spillerton; secretary, Mrs. M. C. Copeland, Marion; treasurer, A. M. Townsend, Marion.

Program Committee—T. J. Youngblood, Mrs. J. E. Hartkopf, A. Luke Ralls, Mrs. M. L. Copeland and W. W. Grant.

Program, Friday, October 19.—Morning session—10:30 o'clock.

Song, "America;" prayer, Rev. J. H. Ford, Marion; music, led by Miss Hendrickson, Marion; address of welcome, Judge W. F. Slater, Marion; remarks, President W. M. Reid, Spillerton; Tomato Culture, Moses Stilley, Lake Creek; adjournment.

Afternoon session, 1:15 o'clock.

Music; discussion, Country Roads, Newt. Roberts, Attilla; Geo. Neely, Absher; music, quartette; rest; Horticulture; M. V. Felts, Lake Creek, C. M. Dickson, Parrish; James Barter, Attilla; recitation, Mabel Capron; report of Domestic Science Cooking School at Springfield, Miss Jennie Hendrickson, Marion; music; remarks, Congressional President H. G. Easterly, Carbondale.

Evening session, 7:30 o'clock.

Song, "Battle Hymn Republic;" music, Marion High School; recitation, George Stone, Marion; Insects Injurious to Corn, Wheat or Other Crops, Prof. G. H. French, Carbondale University; music; adjournment.

Saturday, October 20. Morning session—9:00 o'clock.

Music; prayer, Rev. McCalley, Marion; music; Rotation of Crops, T. M. Mitchell, Corinth; W. T. Fowler, Lake Creek, and Geo. Roberts, Herrin; music; rest; Farmers' Garden, R. O. Clarida, Crab Orchard; Mrs. R. Hendrickson, Marion; How I Made Success With My Hogs, J. C. Chamness, Carterville; adjournment.

Afternoon session—1:15 o'clock.

Music; Insects Injurious and Insects of Benefit, Daniel Berry, Carmi; rest; best essay on Corn, Corn, 30 minutes, prize \$1.00; song, "In the Sweet By and By;" secretary's report; election of officers.

Average daily attendance, 175. Cost of Institute, \$75.00.

Officers elected for the ensuing year—President, T. M. Mitchell, Corinth, Ill.; secretary, Mrs. M. L. Copeland, Marion; treasurer, A. M. Townsend, Marion.

Had an exhibit of farm and domestic products.



Minnie L. Copeland, Marion, Ill.

WINNEBAGO COUNTY FARMERS' INSTITUTE.

Held Tuesday and Wednesday, January 15 and 16, 1901, at Mendelssohn hall, 513 West State street, Rockford, Illinois.

Officers—Foster Graham, president, P. O., Harrison; E. M. Breckenridge, vice-president, Rockford; W. L. Frisbie, secretary, R. F. D. No 1, Rockford; D. W. Evans, treasurer, R. F. D. No. 1, Rockford.

Reception Committee—Theron J. Pierpont, Geo. W. Collins, D. W. Evans, C. O. Lyford, and W. H. Pollock.

Township Vice-Presidents—C. C. Lyford, Roscoe; A. J. Lovejoy, Harlem; Geo. W. Collins, Guilford; Asa Peacock, Cherry Valley; C. J. Radcliff, New Milford; Alanson Stewart, Jr., Owen; D. T. Conkling, Rockton; W. H. Pollock, Shirland; Jobe Carpenter, Harrison; Robert Eddy, Burrill; Clarence Eldridge, Winnebago; Wm. Neely, Seward; Ross Barningham, Durand; Frank Cross, Laona; John Marsh, Pecatonica; Theron Pierpont, Rockford.

Program, Tuesday, January 15. Morning session, 10:00 o'clock.

Prayer, Rev. B. E. S. Ely; opening address, President Foster Graham, Harrison; My Experience Feeding Cattle, J. C. Rippentrop, Elida; discussion; The Architecture of the Farm Home and How to Secure Sanitary Surroundings, Frank Carpenter, Rockford; Ventilating of Farm Buildings, Prof. F. H. King, Agricultural Physicist, University of Wisconsin; appointing of committees; adjourn for dinner.

Afternoon session, 1:00 o'clock.

Farm Conveniences, S. M. Mulnix, Damascus; Type and Quality in Farm Stock, A. P. Grout, Winchester; discussion; music, Miss Martha Kennedy; Construction of the Silo and Handling of the Silage, Prof. F. H. King, Madison, Wis.; discussion; question box.

Wednesday, January 16. Morning session, 9:30 o'clock.

Agriculture in Public Schools, Prof. O. J. Kern, Rockford; discussion; Swine Husbandry, G. A. Willmarth, President State Farmers' Institute, Seneca; select reading from the "Cross and Sword" by the author, C. E. Banks, Rockford; Farm Telephones, Herbert Hicks, Rockford; discussion; secretary's report; reports of committees and election of officers; question box; adjourn for dinner.

Afternoon session, 1:00 o'clock.

Our Interests in Domestic Science, Mrs. W. L. Frisbie, Rockford; Kitchen Conveniences, Miss Ada Blakeway, Ridott; discussion; music, Miss Martha Kennedy; Bread, Mrs. Helen Armstrong, Teacher of Cookery, Chicago; discussion; question box.

Average daily attendance, 500; cost of institute, \$104.28.

Officers elected for the ensuing year—President, E. M. Breckenridge, Rockford, R. F. D. No. 3; secretary, W. L. Frisbie, Rockford, R. F. D. No. 1; treasurer, D. W. Evans, Rockford, R. F. D. No. 1.

WOODFORD COUNTY FARMERS' INSTITUTE AND THE 11TH CONGRESSIONAL DISTRICT INSTITUTE.

Were held at Metamora, October 17, 18 and 19, 1900.

Officers—President, Isaac Boya, Metamora, Ill.; secretary, W. H. Smith, Eureka; treasurer, Geo. Shuman, El Paso.

Program—Morning session—10:00 o'clock. Wednesday, October 17, 1900.

Meeting called to order by Isaac Boys, president; report of secretary and treasurer; election of officers and other business.

Afternoon session—1:30 o'clock.

Music; prayer, Rev. Palmer; "Corn Culture," A. D. Shamel, Champaign University; discussion led by M. W. Wilson, Metamora, Ill.; "How to Keep Our Boys and Girls on the Farm," Amos Marshall, Rosnoke; "Effects of Rural Influence on Moral Character," F. M. Higgins, Ottawa, Ill.

Evening session—7:30 o'clock.

Music; reading, Miss Myra McGuire; song, T. M. Higgins; address, Prof. B. J. Badford, Eureka; song, T. M. Higgins.

Thursday, October 18th. Morning session.

Music, Metamora Band; prayer; "Road Improvement," J. A. Ranney, Metamora; discussion led by W. A. Davidson, Eureka.

Afternoon session.

Music, Metamora band; Poultry, Ira Cottingham, Eden, Ill.; discussion led by Geo. Heyle, Washington, Ill.; Farm Telephones, Wm. Ringle, Osco, Ill.; discussion led by H. W. Bullock, Eureka, Ill.; How Shall We Live, Mrs. Jennie Barlow, Bloomington, Ill.

Evening session.

Music, reading, Miss Line Brenneman, Minier, Ill.; "Education of the Farmer" G. A. Willmarth, Seneca, Ill., President Illinois Farmers' Institute; Mission of Farmers' Institutes, by A. B. Hostetter.

Friday, October 19th. Morning session.

Music; The Farmers' Home, L. H. Kerrick; Corn Talk, W. B. Mills, Mt. Palatine, Illinois.

Afternoon session.

Music; Sanitary Farming, Dr. N. B. Crawford, Eureka, Ill.; Beef Cattle, L. H. Kerrick, Bloomington, Ill.; Farmers' Wives and Daughters, Miss Line Brenneman, Minier, Ill.

Average daily attendance, 400. Cost of institute, \$93.50.

Officers elected for the ensuing year—President, Charles Ireland, Washburn, Ill.; secretary, John L. McGuire, Metamora; treasurer, George Shuman, El Paso. Had an exhibit of Farm and Domestic Products.

SUMMARY.

Total number of counties holding Farmers' Institutes during the year.....	101
Total number of Institutes held during the year.....	109
Total number in daily attendance at Institute sessions.....	32,473
Average daily attendance.....	306
Total cost of 109 Farmers' Institutes.....	\$9,693 76
Average cost of County and District Institutes.....	88 98

APPENDIX



Each one of the Illinois Farmers' Institute Free Libraries contains about fifty volumes. You will find by examining these lists that there are books suited to the comprehension and needs of every member of a family. Five or more citizens of any community in need of books can secure the use of one of these libraries free for six months by filing application for same, endorsed by the president and secretary of the county farmers' institute of the county in which the community is located. The use of these books to be free to all who will comply with the rules of the library. The only expense will be the express charges from Springfield and return.

For application blanks and further information address

A. B. HOSTETTER,

Secretary Illinois Farmers' Institute, Springfield, Illinois.

FREE LIBRARIES.

The Farmers' Institute free libraries have been very much in demand in all sections of the State. Those who have been enterprising enough to make application have received libraries and have been very much benefited by their use. The character and scope of the books in these libraries has given general satisfaction, and so far all the patrons of the several communities have found something to supply their desires. That a community having had a library may secure another with a different lot of books the libraries are divided into sets.

The following is a list of the several sets in use at the time of this report:

Libraries Nos. 1, 2, 3, 4, 5 and 6, contain—

Adventures of a Brownie.....	Muloch	Man Without a Country.....	Hale
American Dairying.....	Gurlier	Old Fashioned Girl.....	Alcott
Beside the Bonnie Briar Bush.....	MacLaren	Pioneer Stories of the Mississippi Valley.....	McMurry
Birds' Christmas Carol.....	Wiggin	Plant World.....	Vincent
Black Beauty.....	Sewall	Polly Oliver's Problems.....	Wiggin
Boston Cooking School Cook Book.....	Farmer	Representative Men.....	Emmerson
Child's History of England.....	Dickens	Schonberg Cetta Family.....	Charles
Christmas Stories.....	Dickens	Seven Little Sisters.....	Andrews
Dog of Flanders.....	Ouida	Sharp Eyes and Other Papers.....	Burroughs
Drinking Water and Ice Supplies.....	Prudden	Stories of Great Americans.....	Eggleston
Early Life of Abraham Lincoln.....	Tarbell	Stories of Invention.....	Hale
Evangeline, and Other Poems.....	Longfellow	Story of Bacteria.....	Prudden
Fables and Folk Stories.....	Scudder	Story of the Greeks.....	Guerber
Feeds and Feeding.....	Henry	Story of the Romans.....	Guerber
Fertility of the Land.....	Roberts	Tales from Shakespeare.....	Lamb
Fifty Famous Stories Retold.....	Baldwin	Ten Boys.....	Andrews
Garden Making.....	Bailey	Uncle Tom's Cabin.....	Stowe
Grandfather's Chair.....	Hawthorne	Undine.....	Fouque
Man's Value to Society.....	Hilliss		

Libraries Nos. 7, 8, 9, 10 and 11 contain—

A. B. C of Butter Making.....	Monrad	Lessons With Plants.....	Bailey
Autocrat of the Breakfast Table.....	Holmes	Little Journeys to Homes of Famous Women.....	Hubbard
Babbette.....	Stuart	Notes on Nursing.....	Nightingale
Beautiful Joe.....	Saunders	Origin of Species.....	Darwin
Ben Hur.....	Wallace	Pilgrims Progress.....	Bunyan
Boyhood of Lincoln.....	Butterworth	Power Through Repose.....	Call
Brave Little Holland.....	Griffiths	Principles of Agriculture.....	Bailey
Captain January.....	Richards	Rab and His Friends.....	Brown
Chemistry of Cooking and Cleaning.....	Richards	Ramona.....	Jackson
Christmas Fairy.....	Winter	Robinson Crusoe.....	DeFoe
Each and All.....	Andrews	Silas Marner.....	Eliott
Essay on Burns.....	Carlyle	Snow Bound.....	Whittier
Essay from Sketch Book.....	Irving	Story of Patsey.....	Wiggin
Food and Its Functions.....	Knight	Spraying of Plants.....	Lodeman
Frederick the Great and His Court.....	Mulbach	True to the Old Flag.....	Henty
Grandmother's Story of Bunker Hill.....	Holmes	Vision of Sir Launfal.....	Lowell
Greek Heroes.....	Kingsley	Water and Ice Supply.....	Prudden
Home Sanitation.....	Richards	What is Worth While.....	Brown
Hugh Wynne, two volumes.....	Mitchell	Zenobia.....	Ware
Ivanhoe.....	Scott		

Libraries Nos. 12, 13, 14, 15 and 16 contain—

Auld Lang Syne.....Maclaren
 Blessed be Drudgery.....Gannett
 Cookery in the Public Schools.....White
 David Harum.....Westcott
 Domestic Sheep.....Stewart
 Dust and Its Dangers.....Prudden
 Fur Seal's Tooth.....Monroe
 German Household Tales.....Grimm
 Good Cooking.....Rorer
 Hand Book of Sanitary Information.....Tracy
 Hans Brinker.....Dodge
 How to Handle Vicious Horses.....Gleason
 Insect Life.....Comstock
 Kenilworth.....Scott
 Kentucky Cardinal.....Allen
 La Salle.....Abbott
 Legends of the Red Children.....Pratt
 Little Gervaise.....Winter
 Little Journeys to Homes of Great
 Statesmen.....Hubbard

Little Lord Fauntleroy.....Burnett
 Little Minister.....Barrie
 Marjorie Daw.....Aldrich
 Melody.....Richards
 My Lady.....Bouvet
 My Summer in a Garden.....Warner
 Our Mutual Friend.....Dickens
 Pericles.....Abbott
 Stoddard's Lectures, Vol. III.....Stoddard
 Stories from the Arabian Knights.....
 Story of Tonty.....Catherwood
 Tales of a Wayside Inn.....Longfellow
 Talks Afield.....Bailey
 The Soil.....King
 Times of Gustof Adolf.....Topelius
 Timothy's Quest.....Wiggin
 Tom Brown's School Days.....Hughes
 The War of Independence.....Fiske
 With Lee in Virginia.....Henty
 Work.....Alcott

Libraries No. 17, 18, 19, 20 and 21, contain—

A. B. C. of Butter Making.....Monrad
 Adam Bede.....Elliot
 Addresses.....Drummond
 Alexander Hamilton.....Lodge
 Bee People.....Morley
 Bleak House.....Dickens
 Classics for Little Ones.....McMurry
 Fairy Tales for Little Readers.....Burke
 First Lessons With Plants.....Bailey
 Food Materials and their Adultera-
 tion.....Richards
 Four American Naval Heroes.....Beebe
 From Attic to Cellar.....Holt
 Garden and Farm Topics.....Henderson
 The Graysons—A Story of Illinois.....Eggleston
 Hiawatha Primer.....Holbrook
 Honor Bright.....Rowell
 House Beautiful.....Gannett
 Household Management and Cook-
 ery.....Parloa
 Jean Val Jean.....Wiltse
 Lady of the Lake.....Scott
 Land Drainage.....Miles

Little Masterpieces—Franklin.....Perry
 ..Lincoln.....Perry
 ..Webster.....Perry
 Martha Washington.....Wharton
 Meadow Grass.....Brown
 Mine Own People.....Kipling
 Nature's Serial Story.....Roe
 New England Girlhood.....Larcom
 Plant Life on the Farm.....Masters
 Poems.....Browning
 Primer of Hygiene.....Reynolds
 Rob Roy.....Scott
 Seraph the Little Violiniste.....Jamison
 Snow Shoes and Sledges.....Monroe
 Stoddard Lectures.....Stoddard
 Stories Mother Nature Told.....Andrews
 Stories of American Life and Adven-
 ture.....Eggleston
 Stories and Poems for Children.....Thaxter
 Twilight Stories.....Foulke
 Two Years Before the Mast.....Dana
 Views Afoot.....Taylor
 When Dewey Came to Manila.....Otis

Libraries No. 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31, contain—

Alexander the Great.....Abbott
 Afterwhiles.....Riley
 Big People and Little People of Other
 Lands.....Shaw
 Bird World.....Stickney
 Bits of Travel.....Jackson
 Black Beauty.....Sewall
 Blessings of Cheerfulness.....Miller
 Book of Legends.....Scudder
 Captains Courageous.....Kipling
 Children of the Ghetto.....Zangwill
 Feeds and Feeding.....Henry
 Felix Holt.....Elliot
 Flute and Violin.....Allen
 Four Great Americans.....Baldwin
 Four American Pioneers.....Perry and Beede
 Friends and Helpers.....Eddy
 Hawthorne, Little Masterpieces.....Perry
 Henry Esmond.....Thackeray

Janice Merideth.....Ford
 Little Women.....Alcott
 Loveliness.....Phelps
 Of Making One's Self Beautiful.....Gannett
 Progress and Poverty.....George
 Rembrandt.....Hurl
 Right Living as a Fine Art.....Hillis
 Short Stories From English History.....
 Spanish Peggy.....Blaisdale
 Tale of Two Cities.....Dickens
 Talks Afield.....Bailey
 Thomas Jefferson.....Morris
 The Story of the Other Wise Man.....VanDyke
 The Study of the Breeds.....Shaw
 The Two Pilgrims.....Tolstol
 The Workers.....Wycott
 When Boston Braved the King.....Barton

Libraries No. 32, 33, 34, 35, 36, 37, 38, 39, 40 and 41, contain—

A. B. C. of Butter and Cheese Making.....	Monrad	Little St. Elizabeth.....	Burnett
Anderson's Fairy Tales.....	Anderson	Longfellow's Poems.....	Longfellow
Battles for the Union.....	Holmes	Practical Agriculture.....	James
Black Beauty.....	Sewall	Seats of the Mighty.....	Parker
Brook and Bayou.....	Bayliss	Shakespeare Stories.....	Neasbit
Children's Stories.....	Dickens	Ships That Pass in the Night.....	Harraden
Dust and Its Dangers.....	Prudden	Stickit Minister.....	Crockett
European Breezes.....	Pitman	Story Hour.....	Wiggin
Fifteen Decisive Battles.....	Creasy	Study of the Breeds.....	Shaw
First Violin.....	Fothergill	Swiss Family Robinson.....	
Flower Fables.....	Alcott	Tales of the Enchanted Islands.....	Higginson
Food and Its Functions.....	Knight	Tattine.....	Ogden
Good Cooking.....	Rorer	Twice Told Tales.....	Hawthorne
Great Books as Life Teaches.....	Hillis	Uncle Sam's Secrets.....	Anstin
Kit Kennedy.....	Crockett	We Girls.....	Whitney
Letters to a Farm Boy.....	Wallace	When Knighthood was in Flower.....	Caskoden
Life of Washington.....	Wilson	Yesterday With Authors.....	Fields
Little Master Pieces—Poe.....	Perry	Young's Colonists.....	Henty

Libraries No. 42, 43, 44, 45, 46, 47, 48, 49 50 and 51, contain—

Little Men.....	Alcott	Farthest North.....	Nansen
Choir Invisible.....	Allen	Signal Boys of '75.....	Otis
Eben Holden.....	Bacheller	Santa Claus' Partner.....	Page
Principles of Fruit Growing.....	Bailey	Children's Life of Abraham Lincoln.....	Putnam
Jane Eyre.....	Bronte	Kentucky Colonel.....	Read
Creole Days.....	Cable	Quicksilver Sue.....	Richards
How Women May Earn a Living.....	Candee	Poetical Works.....	Scott
Heroes of Middle West.....	Catherwood	Five Little Peppers.....	Sidney
North America.....	Carpenter	Expansion of American People.....	Sparks
Self Culture.....	Channing	Rudder Grange.....	Stockton
Boys of '61.....	Coffin	Lobo, Rag and Vixen.....	Thompson
Christmas Carol.....	Dickens	Alice of Old Vincennes.....	Thompson
Greatest Thing in the World.....	Drummond	Two Biddicut Boys.....	Trowbridge
Hon. Peter Sterling.....	Ford	Walks and Talks in Geological Fields.....	Winchell
Practical Floriculture.....	Henderson	Handbook for Farmers and Dairymen.....	Woll
Heroes of Greek Fairy Tales.....	Kingsley		
Days' Work.....	Kipling		

Libraries No. 52, 53, 54, 55, 56, 57, 58, 59, 60 and 61 contain—

Eight Cousins.....	Alcott	Story of Oliver Twist.....	Kirk
Aftermath.....	Allen	Child Stories from the Masters.....	Menefee
Lolani, the Little Cliff Dweller.....	Bayliss	Bird Ways.....	Miller
Boy of the First Empire.....	Brooks	Two Little Confederates.....	Page
Development of Thrift.....	Brown	Joyous Story of Toto.....	Richards
Choice of Books.....	Carlyle	Cost of Living.....	Richards
'Round the World.....	Carnegie	Plain Words About Food.....	Richards
The Crisis.....	Churchill	King of the Golden River.....	Ruskin
Tenting on the Plain.....	Custer	Children of the Cold.....	Schwatka
David Copperfield.....	Dickens	Yesterday in the Philippines.....	Stevens
Battling for Atlanta.....	Dunn	Gentlemen from Indiana.....	Tarkington
Romola.....	Elliot	Enoch Arden and Other Poems.....	Tennyson
Vesty of the Basins.....	Green	Tuskegee.....	Thrasher
Historic Boston.....	Hale	What Men Live By.....	Tolstol
Ethan Allen.....	Hall	New England Nun.....	Wilkins
Gardening for Profit.....	Henderson	Domestic Science.....	Wilson
Little Journeys to Homes of Eminent Painters.....	Hubbard		

Libraries No. 62, 63, 64, 65, 66, 67, 68, 69, 70 and 71 contain—

Jack and Jill.....	Alcott	Tollers of the Sea	Hugo
Girls Who Became Famous.....	Boulton	A Boy I Knew and Four Dogs.....	Hutton
Prince Tip Top.....	Bouvet	The Feeding of Animals.....	Jordan
Miss Baggs, Secretary.....	Burnham	Boy's Life of General Grant.....	Knox
Household Economics.....	Campbell	Diseases of Horses and Cattle.....	McIntosh
Cyclopedia of Games and Sports..	Champlin	Making of Illinois.....	Mather
Sky Pilot.....	Conner	Getting On In the World.....	Mathews
Tales of Christmas and Other Seasons..		True Bear Stories.....	Miller
	Coppee	Air, Water and Food.....	Richards
Dombey and Son.....	Dickens	American Ideals and Essays.....	Roosevelt
With Trumpet and Drum, poems.....	Field	The Talisman.....	Scott
Autobiography of Benjamin Franklin...	Franklin	The Casting Away of Mrs. Lecks and Mrs. Aleshine	Stockton
Japan in History—Folk-Lore and Art....		The Evolution of Dodd.....	Smith
	Griffis	The Heart of Toll.	Thanet
On the Wing of Occasions; Civil War stories.....	Harris	Real Folks.....	Whitney
With Wolf in Canada.....	Hentry	Marm Lisa.....	Wiggin
First Aid to Young Housekeepers.....	Herrick	Industrial Evolution of the United States	Wright

In addition to the above named books each library contains the following books for reference and practical instruction:

Dairy Bulletins..	Department of Agriculture	Live Stock and Poultry Bulletins.....	
Diseases of Cattle.....		.....	Department of Agriculture
.....	Department of Agriculture	Public Instruction Circular on School Aachit- ecture.	
Diseases of the Horse.....		Report Illinois Dairymen's Association.	
.....	Department of Agriculture	Report of Illinois Farmers' Institute.	
Domestic Science Bulletins		Report of State Horticultural Society.	
.....	Department of Agriculture	Year Book, 1900.	
Farm Crop Bulletins.....			
.....	Department of Agriculture		

THE AGRICULTURAL BUILDING.

The University of Illinois is in possession of the largest agricultural building on the Continent. It was built at an expenditure of \$150,000 and is admirably adapted for the purpose of affording facilities for teaching technical agriculture.

The structure is of stone and brick, roofed with slate. It is in four parts built around an open court and connected by corridors. The main building is 248 feet long, from 50 to 100 feet deep, and three stories high. There are offices, class-rooms, laboratories, toilet rooms, and assembly hall, and fire-proof storage for records. The wings are each 45x116 feet, and two stories high. The right wing is a farm machinery laboratory and museum, the left accommodates dairy manufacturers below and household science above, and the rear wing is for veterinary operations and stock judging.

It is about a quarter of a mile around the entire building, which has about 200 rooms and a little over two acres of floor space.

AIMS AND SCOPE

The College of Agriculture offers to students an education designed to fit them for the business of farming and at the same time to furnish a means of culture. This education is, therefore, partly technical and partly cultural. Its end is the training of students to be not only successful farmers, but good citizens and successful men as well. In other words, it seeks to provide an education suitable to the needs of rural people.

The technical portion of the courses offered in the College of Agriculture constitutes about one-half of the entire work of the student. In studying these technical subjects the aim is not so much to teach rules of practice as to make plain the principles of agricultural science. Of the remaining portion of the course, twenty-five semester hours are prescribed in the sciences. Since the technical subjects are also of a scientific character, the course as a whole is essentially scientific, rather than literary; yet the College is mindful of the educational importance of history, literature, language, and



COLLEGE OF AGRICULTURE, UNIVERSITY OF ILLINOIS, URBANA, ILL.

the political sciences, and reasonable attention is, therefore, given to these subjects and their pursuit is encouraged by a liberal amount of open electives.

The College offers, through the department of household science, a variety of courses especially treating of the affairs of the home.

METHODS OF INSTRUCTION.

Of the twelve instructors in technical subjects, eleven devote their entire time to agriculture, and this number will be largely increased the coming year. Instruction is by laboratory work supplemented by text-books, lectures, and reference readings which are almost constantly assigned from standard volumes and periodicals. The student is brought into close practical contact with his subject. He takes levels, lays tile, tests the draft of tools, traces root systems of corn and other crops, tests germination of seeds, determines the fertility in soils and the effects of different crops and of different rotations upon soil fertility. He does budding, grafting, trimming, and spraying, and works out problems in landscape gardening. He tests milk, operates separators, makes and judges butter and cheese. He studies cuts of meat and samples of wool, judges a great variety of animals, and has practice in diagnosing and treating their diseases.

EQUIPMENT.

The College keeps on deposit from the largest manufacturers thousands of dollars worth of plows, cultivators, planters, cutters, shellers, grinders, mowers, binders, engines, etc. It has extensive collections of agricultural plants and seeds and their products. Laboratories are well equipped with apparatus and appliances for the study of manures, fertilizers, fertility of soils, soil physics, soil bacteriology, germination of seeds, corn judging, etc. The grounds of the University and the fields and orchards of the Experiment Station are always available for illustration in class work. An illustrative series of colored casts of fruit and enlarged models of fruits and flowers, collections of seeds and woods, cabinets of beneficial and noxious insects with specimens of their work, photographs, maps, charts, drawings, lantern slides—all afford valuable material for study and illustration.

Specimens of Morgan horses; Shorthorn, Jersey, Ayrshire, and Holstein-Friesian cattle; Shropshire, Merino, and Dorset sheep, and Berkshire swine afford material for judging, which, however, is vastly increased by loans from prominent herds. In the dairy department is a complete outfit for a milk-testing laboratory and for cream separation and butter and cheese making. The department of veterinary science owns a collection illustrating materia medica, a collection of pathological specimens illustrating special abnormal

bony development, and a *papier-mache* model of a horse, capable of dissection, and showing every important detail of structure. In addition are levels, lanterns, microscopes, and cameras, an extensive list of agricultural journals, a complete file of experiment station bulletins from all the states, and an excellent assortment of standard reference books, including nearly all the pedigree registers published.

DEPARTMENT OF AGRONOMY.

The Department of Agronomy, with six teachers, gives instruction in those subjects that relate especially to field and its affairs, as drainage, farm machinery, field crops, the physics and bacteriology of the soil, manures, rotation and fertility, the history of agriculture, farm management and comparative agriculture. The object is to acquaint the student with the facts and principles connected with the improvement of soils, the preservation of fertility, the nature of the various crops, and the conditions governing their successful and economic production and with the development of agriculture. This object is attained by the application of the laboratory methods of study to these subjects, supplemented by lectures, class room work, and a free use of standard literature.

EUGENE DAVENPORT, M. Agr.,
Dean of College of Agriculture, Urbana, Ill.



GEORGE M. RICHARDSON.
S. J. HAIGHT.

GEO. P. CAMP.
SPOOR TROPHY.

E. T. ROBINS.
E. L. WORTHEN.

Students of the Department of Animal Husbandry of the University of Illinois who won first honors in judging horses, cattle, sheep and swine, and the Spoor Trophy Championship of America in the Inter-Collegiate Live Stock Judging Contest held at the International Exposition, Chicago, December 8, 1900.

RESULTS OF THE INTER-COLLEGIATE LIVE STOCK JUDGING CONTEST HELD AT INTERNATIONAL LIVE STOCK EXPOSITION, CHICAGO.

PRIZE MONEY WON BY STUDENTS FROM VARIOUS COLLEGES.

Illinois won....	\$346 65
Wisconsin won.....	87 50
Ontario Agricultural College won.....	73 00
Iowa won.....	49 32
Indiana won.....	39 50
Michigan won.....	33 50
North Dakota won.....	4 00
Missouri won.....	

Illinois won \$56.00 more than all others combined.

This unexpected result so pleased Mr. Spoor that he changed the \$200 championship prize to the present \$700 trophy. In other words Illinois won \$846.65, or over three times as much as all other institutions combined, or almost ten times as much as her nearest rival, Wisconsin, or eighteen times as much as Iowa, which has twelve dollars invested in live stock equipment for every dollar invested by Illinois.

ROLL OF HONOR.

The following is a list of those who attended the College of Agriculture of the University of Illinois the past year on scholarships awarded through the Illinois Farmers' Institute.

It is recommended that the several County Institutes of the counties in which these students reside invite such students to take part on the institute program on some topic connected with their college work.

County Represented.	Name.	Home Address.
Alexander.....	Kuster, Arthur.....	Mahomet.....
Bond.....	Whiteford, Milton.....	Manito.....
Boone.....	Bennett, Samuel A.....	Belvidere.....
Boone.....	Warne, John H.....	Batavia.....
Brown.....	Duncan, Fred T.....	Seaton.....
Bureau.....	Bryant, Arthur W.....	Princeton.....
Bureau.....	Wilson, Leroy.....	Princeton.....
Calhoun.....	Sanford, Wilber H.....	Murrayville.....
Carroll.....	Begeman, George.....	Elkhorn Grove.....
Carroll.....	Hendrick, Lewis C.....	Milledgeville.....
Cass.....	Jones, James H.....	El Dara.....
Champaign.....	Howe, Ralph B.....	Urbana.....
Christian.....	Dalbey, Dwight S.....	Taylorville.....
Christian.....	Large, Harry.....	Millersville.....
Clark.....	Shinn, James R.....	Mattoon.....
Clay.....	Dorsey, Clarence B.....	More.....
Clay.....	Mills, James B.....	Clay City.....
Clinton.....	Pittman, Elmer D.....	Mahomet.....
Coles.....	Ames, Harvey N.....	Mattoon.....
Cook.....	Williams, Myron B.....	Evanston.....
Cook, 1st Cong. Dist.....	Wing, DeWitt C.....	Chicago.....
Cook, 2d Cong. Dist.....	White, Earle A.....	Loon Lake.....
Cook, 3d Cong. Dist.....	Anderson, Hervey H.....	Chicago.....
Cook, 4th Cong. Dist.....	Wolf, Edd.....	Farina.....
Cook, 5th Cong. Dist.....	Seudder, Harry D.....	Chicago.....
Cook, 6th Cong. Dist.....	Ahlswede, Arthur C.....	Chicago.....

County Represented.	Name.	Home Address.
Crawford	Gillespie, Charles M.	Paris.
DeKalb	Rector, John F.	Smithfield.
DeWitt	Bronson, Eugene V.	Urbana.
Douglas	Howell, Carrie B.	Urbana.
Douglas	Goodspeed, Wilbur F.	Tuscola.
DuPage	Howard, Wallace L.	Sheffield.
DuPage	Taylor, Albert B.	Normal.
Edgar	Clapp, Ivan B.	Grand View.
Edwards	Coons, Clarence W.	Bloomington.
Effingham	Bernhard, Susanna S.	Shumway.
Effingham	Ruffner, Lester L.	Mason.
Fayette	Bonnell, William L.	Elondale.
Fayette	Scott, Gilbert W.	Franklin.
Ford	Richardson, George M.	Williamsville.
Ford	Alford, Irving S.	Sibley.
Franklin	Rankin, W. J. R.	White Heath.
Fulton	Lloyd, Robert C.	Canton.
Fulton	Cattron, John W.	Fairview.
Gallatin	Winterberger, Ralph.	Junction.
Greene	Constant, Harvey J.	Illioopolis.
Grundy	Dewey, Henry E.	Mazon.
Hamilton	Southwick, Frank E.	Odell.
Hamilton	Walcher, Charles E.	Millersville.
Hancock	Worthen, Edmund L.	Warsaw.
Hardin	Logan, Clarence C.	Flora.
Henderson	Beal, Perry L.	Reed.
Henry	Finley, Joseph O.	Oneida.
Henry	Stitt, Harry W.	Alpha.
Iroquois	Meier, Hermann E.	Woodworth.
Iroquois	Flagg, David R.	Clarence.
Jackson	Wells, Fred M.	Moline.
Jackson	Ziegler, Wilfred I.	Clinton.
Jasper	Carr, Henry B.	Lis.
Jefferson	Haight, Samuel J., Jr.	Mendota.
Jefferson	Wood, Clifton J.	Friendsville.
Jersey	Riehl, Anna.	Alton.
Jo Daviess	Hartzell, John C.	Mason City.
Johnson	Hedges, Samuel R.	Urbana.
Kane	Basting, Ferdinand, Jr.	Fulton.
Kane	Watson, Clarence C.	Woodstock.
Kankakee	Viall, Frank L.	Manteno.
Kankakee	Isser, Jules P.	Manteno.
Kendall	Fellingham, Clark H.	Verona.
Kendall	McClelland, Robert A.	Yorkville.
Knox	Mitchell, Maurice F.	Oneida.
LaSalle	Center, Orlo D.	Grand Ridge.
Lawrence	Montgomery, William H.	Aledo.
Lawrence	Readhimer, Jerome E.	Champaign.
Lee	Upton, Mabel E.	Rochelle.
Livingston	Spence, William D.	Fairbury.
Logan	Applegate, Archie B.	Atlanta.
McDonough	Miner, Aaron B.	Adair.
McHenry	Marsh, Ralph G.	Huntley.
McLean	Creamer, William C.	Tolono.
Macon	Wade, Albert E.	Decatur.
Macon	McGrath, Sylvester J.	Warrensburg.
Macoupin	Neff, Martin L.	Petersburg.
Madison	Wetzel, Adolph J.	Alhambra.
Marion	Thompson, Clarence.	Champaign.
Marion	Schermerhorn, May.	Kinmundy.
Marshall	Perkins, H. L. B.	Beaconsfield.
Mason	Krelling, Christian.	Bishop.
Massac	Oakes, Arthur M.	Metropolis.
Massac	Lindsey, Norman W.	Samoth.
Menard	Culver, Carl A.	Athens.
Mercer	Clay, John L.	Galesburg.
Monroe	McCarthy, John.	Arcola.
Montgomery	Paisley, Robert H.	Irving.
Morgan	Shaw, Guy L.	Summer Hill.
Moultrie	Wise, J. Roy.	Savoy.
Ogle	Carmichael, Berton E.	Rochelle.
Peoria	Winter, Jay W.	Wenona.
Perry	Fulton, Eugene.	Gibson City.
Platt	Bronson, Bertha V.	Urbana.
Pike	Stebbins, Roy.	Summer Hill.
Pulaski	Endicott, Robert B.	Villa Ridge.
Pulaski	Dille, Charles E.	Villa Ridge.
Putnam	Williams, Gardner E.	Putnam.
Richland	Stookey, Marshall C.	Harristown.
Rock Island	Eckhardt, William G.	Buffalo Prairie.
Rock Island	Armstrong, Robert M.	Preemption.

County Represented.	Name.	Home Address.
St. Clair.....	Eidmann, Gustav H.....	Mascoutah.....
St. Clair.....	Hill, Arthur H.....	Dundee.....
Saline.....	Coleman, Clyde B.....	New Windsor.....
Saline.....	Dunlap, Nora B.....	Savoy.....
Sangamon.....	Ladage, Fred W.....	Woodside.....
Sangamon.....	Stitt, William B.....	Berlin.....
Schuyler.....	Thompson, James A.....	Layton.....
Scott.....	Constant, Irwin J.....	Dawson.....
Scott.....	Schuppel, Henry C.....	Barclay.....
Shelby.....	Jenkins, Elbert A.....	Tower Hill.....
Shelby.....	Miller, Wm. E.....	Tower Hill.....
Stark.....	Moffit, Minor.....	Taylor Ridge.....
Stephenson.....	Stocks, Harry B.....	Eleroy.....
Stephenson.....	Bushman, Virgil E.....	Milledgeville.....
Tazewell.....	Allen, Paschal.....	Delavan.....
Union.....	Camp, George R.....	Harristown.....
Vermillion.....	Gilbert, Charles H.....	Armstrong.....
Wabash.....	Ewald, John J.....	Belmont.....
Wabash.....	Lingenfelter, Lee E.....	Mt. Carmel.....
Wayne.....	Callaway, Leonard W.....	Tuscola.....
Whiteside.....	Lemon, Louis.....	Galesburg.....
Will.....	Forsythe, John.....	Elwood.....
Williamson.....	Trapp, William E.....	Lincoln.....
Winnebago.....	Temple, Ralph W.....	Elida.....
Winnebago.....	Nelson, Emma E.....	Rockford.....
Woodford.....	VanMeter, Anna R.....	ElPaso.....

PAPERS READ AT COUNTY FARMERS' INSTITUTES.

The papers read at County Farmers' Institutes, embodied in this report, were selected by the executive committee of the Illinois Farmers' Institute from the lists of papers recommended by the directors from the several congressional districts.

These lists contained carefully prepared, practical, instructive papers, all of them worthy of publication and careful reading. But more of them were recommended than could possibly be published within the limits of this volume.

There were also a large number of equally valuable, instructive and entertaining papers read at the several County Farmers' Institutes which the directors could not secure.

To select from so many, when all were so excellent, was no easy task. The following papers were accepted by the committee with a view of covering as wide a range of topics as possible. Topics which would be of the most general interest to the farmer and his family and would apply more fully to the State at large.

CATTLE DEPARTMENT.

EXPERIENCE WITH FARM AND STOCK.

Read by Charles Adkins, Bement, Ill., before the Piatt county and 13th Congressional District Institutes, December 12, 1900.

The experience with farm products in central Illinois is confined chiefly to the production of corn, oats, wheat and grass. Corn being the principal money crop of them all, good soil will pay better in corn than any other crop grown in central Illinois. Experience teaches the farmer that corn alone, grown from year to year, exhausts the corn producing element in the soil to a certain extent, therefore it becomes necessary to rotate with these other crops. The best method to prepare and cultivate the soil for a corn crop is a very perplexing question if you listen to the experience of different men on the subject. We hear of deep plowing and shallow plowing, drilled corn and hill corn, and now and then some listed corn, surface cultivation and a deep cultivation.

Experience teaches the ordinary farmer that the time to commence a corn crop is in October; select good seed, place it in a dry place and about April 20th commence plowing from 4 to 6 inches deep with gang plow 14 inches, and about May 1st repick your seed corn, plant 4 or 5 inches deep in hills, about 3 grains to the hill; drilled corn gets weedy, and if your seed has been carefully selected it will come up planted any time in May. The great secret in getting a stand of corn is in the seed. There is a corn grower in Illinois that has raised corn in the State 15 years and never planted a field over. Judgment must be used in planting early; if it is damp and cold plant shallow, and as the weather warms up let your planter down nearly as deep as you plow.

After the corn is planted harrow it about the time it is ready to come up, then commence plowing it as soon as you can after it gets up, plow it deep and very close the first two times and get it clean, after that you need not plow it so deep and you will raise as good corn as any of your neighbors, surface plows notwithstanding. In 1894 I had some experience with surface cultivation, I bought two surface plows and farmed 40 acres altogether with them and farmed the rest of the crop of 280 acres with shovel plows, the season was very dry and that 40 acres had 920 bushels of corn on it and the entire crop of 280 acres averaged 37 bushels per acre, the next season was a good season and the same 40 acres was farmed with shovel plows and there was 3,040 bushels of corn on it and the whole crop of 280 acres averaged 61 bushels per acre, so I concluded there was no superior merit in surface plows. With a good season if you keep your corn clean and the ground mellow you will raise a good crop no matter what implement you cultivate it with.

Experience has taught the farmer that the soil must be fertilized occasionally, also that clover is the cheapest fertilizer he can put on the land, in order to get the clover started; he must sow wheat or oats to start the clover in, if sown alone the weeds generally get the start of it and you get a crop of weeds the first year when you can have a crop of wheat or oats instead, and the clover does just as well as in the weed crop. After the clover crop is started the first question that confronts the farmer, is how to harvest the clover hay, and how to turn it to profit after it is harvested.

If he undertakes to harvest it the old fashioned way, to cut it and stir the thick patches by hand, rake it in wind rows, shock it up, load it on wagons by hand, fork it into the barn or stack by hand, he will find his clover hay has taken too much time. The best way to harvest clover that I ever tried is with a side delivery rake and hay loader, with horse fork in the barn, or derrick if put in the stack. Start your mower and then your rake, which goes around the same way the mower goes; as soon as your hay has cured enough throw two 5-foot swaths together, which makes about the right sized windrow in clover that makes 2 tons to the acre.

You get to the end of your windrow when you get the patch raked you cut around. In clover that makes about 2 tons we cut around about 10 acres, and load on one round, quarter mile rows at a load will average generally about 1½ tons per load. With two men in barn or on stack, one man with fork, one man to drive fork team, three teams and racks, two drivers, one extra loader in the field and one driver in the field, you can unload a load of hay about every 20 minutes; then you want two men to mow and rake and you can move the hay fast and gather it up clean. The side delivery rake makes a narrow windrow and by driving carefully the hay falls in the middle of your rack and there is very little drops off the wagon, which the driver and extra loader can gather up at times when they wait for wagons. Two men can load about as fast as a team goes to a plow, generally, and do it much easier than to fork it on the wagon by hand. Another advantage of the side delivery rake—it turns the swath up in a loose windrow and if hay is heavy after it cures awhile rake it up and your hay cures quicker. If your windrows get rained on just drive astride the windrows and it turns windrow over and shakes it up better than you can do it by hand and much quicker. Clover hay handled in this way will cost you about 50 cents per ton in barn or stack.

Now I think a good way to dispose of this clover hay is to feed it to some well bred cattle, Shorthorns preferred, stack your straw up in some well protected lots and after your cattle have run through your stalkfields and got all out of them that is any good, turn them in around these straw stacks and give them all the good clover hay they want, and they will come out in spring in nice order, if you give them all the clover hay they will eat. If a load or two of feeding steers is kept on the farm they can clean the corn out of the stalkfields, and then put in around the straw and fed corn and clover hay and finished for market about the last of May or first of June.

The advantage of handling cattle in this way, you get all the rough feed on the farm consumed on the farm, and the fertilizer left in lots to be hauled out in the fall on the clover land that is to be plowed for corn the following spring.

The hog is the animal that nearly every farmer has had more or less experience with; some consider him profitable and some unprofitable. We find if you raise enough hogs and they live, they pay the board bill for all other stock fed on the farm. Fence off a patch of the clover field for him and he will turn the clover to good account.

We find in raising any kind of stock it pays best to use only pure bred sires. In shipping hogs and cattle to the Chicago market we find cattle and hogs all of good breeding sell for the best money and feed the best at home. A well bred calf, colt or pig can always be sold for his value, so can a scrub but he is not worth near so much and he eats as much feed as the more valuable animal.

DAIRY DEPARTMENT.

BUTTERMAKING AT HOME.

Mrs. W. P. Gaddy—Read at the Jefferson County Institute.

As a matter of course every one who keeps cows for the purpose of making butter is desirous of making an article that will bring the best price, and of making the greatest amount of butter possible out of the milk produced.

Our statistics show that milk and its products rank third in the list of agricultural yields. Our milch cows in service number nearly 20,000,000 head. The products from these cows amounts to nearly \$500,000,000 annually. Of this amount the receipts for butter amounts to more than one-half, showing the great importance of watching every opportunity for improving this branch of the dairy interests.

Only about one-fourth of the butter made in the United States is factory or creamery made, the other three-fourths being home and farm made.

While on some farms, excellent work is done and a choice article is made, which brings a fancy price, yet through ignorance of correct methods of manufacture and of the demands of the market and, in many instances, through careless and sloven habits, the great bulk of farm made butter fails to bring the price it should, entailing a loss to the farmers of the country, which is enormous in the aggregate, as it costs no more to make and market a pound of good butter than it does a pound of poor butter.

Butter making after the methods of fifty years ago is a losing occupation in this age of advancement, it has been reduced to an exact science and has become one of the highest and most profitable forms of agriculture. It is a business, and we butter makers are manufacturers as truly as any occupation which converts the raw material into the finished product; and we have the same opportunities of lessening the cost of production, improving the quality and putting it on the market in the most attractive and salable form. First, we produce the raw material in the form of milk and must strive to get the greatest quantity and best quality of milk at the least relative cost. This we must do by keeping only the best cows and giving them proper care and liberal, judicious feeding.

The greatest improvement yet introduced into the dairy is the separator. It is a money-maker, a labor-saver, and in every case it improves the quality of the product. In making butter we find that by creaming or skimming there is less loss in handling, less work, conditions more easily controlled and the cost is reduced to a minimum.

Since the introduction of the centrifugal separator, its wonderful work has been recognized by our best buttermakers; and since the introduction of the hand power separator, farm dairying has steadily improved until we now demand and expect as fine an article of butter from the farm as from the best creamery. Separator butter commands the highest price on every butter market in the world; it stands best for fresh consumption and best after long keeping; every dealer and almost all consumers recognize its unquestionable superiority.

Now, having a supply of good milk, which has been taken from a healthy cow in a cleanly manner, it should be strained through a wire strainer and several thicknesses of cheese cloth, and unless it is to be skimmed immediately by a cream separator, it should be aerated and cooled as quickly as possible, as it is while containing the animal heat at the natural temperature that the bacteria develop so rapidly.

No one topic in regard to dairying is receiving so much attention by practical buttermakers and writers as the cleanliness and purification, of the product. Experiments and tests invariably show that the greatest care in milking and most thorough straining can not take or keep all the dirt and filth out of milk. Of still greater importance, however, are the harmful bacteria and disease germs existing in milk or capable of development in it. What is true of milk in this respect is also true of butter made by any gravity process, as the greater per cent of these germs are removed with the cream, and very rapidly develop in it.

A separator gathers and holds in the bowl practically all filth, fibrous and slime matters, including the bacteria germs. If the consumer could see the amount of filth that a separator catches that can not possibly be strained out, they would never drink milk or eat butter unless the milk had previously been run through a separator.

Uniformly good results can not be obtained by the shallow pan system. Whatever may be the cause very bad results often follow an electric storm or thunder shower. The shallow pans make more work than other methods—the creaming is not so thorough as with the separator and therefore the quantity of butter is much less; aside from this there are invariably losses by every setting process, from one cause or another: condition of cow, breed of cow, time of cow in lactation, condition of milk, varying temperatures, weather and climatic influences. The separator does away with all these doubtful results, the milk being separated fresh from the cow.

The skim-milk is a dairying product which the use of the separator altogether changes. Warm, fresh and sweet from the separator it makes the best possible calf and hog food. The separator saves the women of the house the drudgery of carrying so many crocks and pans to and from the cellar, skimming and washing them.

This is an age of progress, and in buttermaking, as well as every thing else, one must keep up with the times or be left behind in the race for the best. I have made butter by the pan system, dash churn and butter bowl, but now I use a De Gaval separator, barrel churn and butter worker, and find them a very great improvement in every respect, even a greater necessity to the butter maker than the mower and binder to the farmer, for the separator is used twice every day in the year, the mower and binder only a few days in a year.

I like the barrel churn; it has no inside fixtures to make it hard to clean and easy to get out of order. It should not be over one-third full to get the best results. Separator cream will churn at a lower temperature than gravity cream, because the fibrous matter has been removed. The nearer the temperature is to 58 degrees the more thorough will be the churning, it also much depends on the ripening of the cream. There is a vast difference in being sour and having the right kind of acid flavor, no old taste, and right here is where so many fail in making butter at home. Keeping cream too long will surely spoil the butter and no amount of care can remove the bad flavor. Never put hot water in your churn of cream if you want the best results.

Scald your churn with hot water, then rinse with cold water by putting on the lid then revolving the churn a few times; draw off the water and put in your cream after having it ripened to the right acidity; then churn until the butter comes in granules as large as wheat grains, which should take from 30 to 60 minutes, never less than 30. Then rinse down with cold water and draw off the milk; then wash the butter in the churn in two waters and salt to your taste. Good fine dairy salt should be used, never the common coarse barrel salt that is used by many. The salt can be sifted on the butter by putting on a part, then revolving the churn one-half way over, thus making

the butter fall with the salted side down, then sifting on the rest of the salt; then put on the lid and revolve the churn until the butter forms in large lumps; let stand 20 or 30 minutes for the salt to dissolve; then take out on a lever worker and work just enough to press the brine or water out and leave it in a thin layer for printing. Then print and set away to harden.

Buttermaking is something you cannot hurry through one day and leave to care for itself the next; but every day has the same routine; the milking, the churning and butterworking all come day by day and if we have private butter customers we must see that they get it regularly and always of a uniformly good quality if we expect to keep them.

Cleanliness is one of the most essential things in making good butter. Everything about the milk should be kept thoroughly clean and sweet; milk buckets, crocks, pans, churn, butter bowl, print, cellar, and care in ripening the cream, churning at the right time and temperature, and marketing the products in an attractive form as possible, makes buttermaking at home a success.

Farmers and farmers' wives, let us try for better butter and more of it, and we shall be well paid for the extra care in better financial returns.

THE RELATIVE PROFIT OF DAIRYING AND STOCK FARMING.

By James Miline, Lockport.

Mr. President, Ladies and Gentlemen:—I have been asked to address this institute upon the Relative Profit of Stock Farming and Dairying, and while I fear that I cannot do the subject justice, I recognize the fact that I have been honored in the request. For it certainly should be considered an honor to be asked to speak before such an audience as this. I am proud of the fact that I am a member of the institute which ranks among the first, if not the first in this great and glorious State of Illinois. Illinois which the census enumerator classes as third, but which we know is the greatest State in the Union.

It is my humble opinion that one must travel far to find an audience more practical, intelligent and appreciative, than which gathers annually at this Will County Farmers' Institute. And if I shall be able in this paper to present anything which will interest you, I shall feel amply repaid for any labor expended upon it. I shall endeavor in this paper, not to tell you what to do and how to do it, but briefly review the subject in question. I am not going to tell you what I have read or what others have told me upon this subject, but in plain language, to present the plain truth drawn from the experience of a plain man.

Please do not understand me as implying that my opinion based upon my own experience is necessarily correct. I sometimes think that I have made more mistakes than any man living. But, if I understand correctly the intents and purposes of institute work, it is not so much for the promulgation of untried theories, but to bring out the actual experience of practical men and women.

I certainly cannot complain of the narrow scope of the subject assigned to me, for the possibilities for exhaustive discussion are simply unlimited. The subject should interest us all, for live stock is the foundation of all agriculture. No intelligent man will contend that a farm can be carried on successfully without some kind of stock.

Some ten or twelve years ago, T. B. Terry, of Ohio, a correspondent for the Country Gentleman, wrote a number of articles, claiming that by tillage and clover, he could preserve the fertility of his farm indefinitely.

But I beg leave to differ with him. The tillage is all right, and the clover is all right, but the majority of farms need manure, and the more of it the better.

In deciding what method of farming to pursue, one must be governed by his location, proximity to markets, amount of his capital, and to a certain extent his natural taste for one or the other kind of stock.

The dairy business probably represents the surest and quickest returns of any of the different methods of farming.

The feed delivered to a dairy cow in the evening, is paid for the next morning in a product which can always be turned. The price may vary, but there is no place in Will county where milk or butter does not find a ready market, and for cash. Along the lines of the principal railroads the milk shippers find an almost unlimited demand for their product. Creameries have become so numerous that no one need travel far to reach one.

Anyone who prefers to run a private dairy, will find no difficulty in disposing of his butter to private customers, provided he makes a first-class article, as the demand in this line is always greater than the supply. The requirements for the milk supply of this city are becoming greater each year and must of necessity increase in the future, as no one will question the statement that Joliet is destined to become a great city, and the district from which it derives its supplies must enlarge proportionately.

Let me repeat! No branch of agriculture promises such quick and sure returns as dairying. The capital invested in the hog and feed necessary to fatten him must lie idle at least eight or ten months, with the danger of cholera, like the "sword of Damocles," always hanging over him, ready at any moment to destroy both principal and profit. It is my opinion and has been by experience that there is no profit in feeding hogs, where they are penned up and fed grain alone. The hog is the necessary adjunct of every farm to utilize the waste from the house and in the barnyard and in this manner only have I been able to make a profit from him.

I know that many of you will differ from me and I should be glad to hear from others upon this subject.

In raising and fattening the steer, still more time must be allowed before any return can be realized from the outlay. Despite the talk of "baby beef" and "forcing to early maturity," a large proportion of the cattle when finished for market are thirty to thirty-six months old. And when it is remembered that every day of that time, something representing a cash value is consumed by said animal, with no return, except the fertility to the land, the present price of beef, large as it may seem compared with that of former years, is none too high and requires careful and prudent management on the part of the feeder to work out a profit. We cannot expect to sell our beef for \$1.50 per pound, or fifteen cents nor ten cents as did some of the exhibitors at Chicago. Such values are exceptional and to a certain extent fictitious. But those who feed the best grades (and no other should be fed in Will county) can reasonably expect to realize from five to six cents per pound and at that price some profit should be assured.

I believe that for nine-tenths of the farmers the much maligned "dual purpose cow" is the most profitable. One which will give a reasonable amount of milk, raise a good calf and when she has finished her work in the dairy will return her first cost to the owner.

Such a cow does exist, in spite of the sneers of the specialist and editors of dairy papers. And although I myself am to a certain extent a specialist, being engaged almost exclusively in the production of milk; when I go out to buy a cow I try to get that kind.

Of all domestic animals, the horse requires the longest time to mature. At three years of age he should be able to commence to work and pay for his keep, but five years is the minimum age at which we may expect to market him and realize our first return in cash. No horse can be raised to the age of five years in Will county and sold for less than \$100, without entailing a loss upon some one.

Therefore only the best show a profit at present prices.

There is another profit in stock raising besides that which is represented by dollars and cents. Perhaps we allow ourselves to be influenced too much by the "almighty dollar." We are prone to measure all our blessings and benefits with a mercenary rule. Of course we are all in business, primarily to earn our bread and butter. But the man who goes only so far and does not aspire to something higher, resembles Bunyan's character of the "Man with too Much Rake," who was so much absorbed in raking to himself the straws and sticks and dust of the ground, that he could not see the crown which the angel held above his head.

Is there not a profit in the pleasure experienced in raising and owning good stock? Would not any farmer be proud to own the best cow or the best hog in Will county? Even though that animal had cost fully as much as it would sell for. The successful winner of the prizes at our county fair last fall can appreciate this profit which is not measured by dollars and cents.

And those who failed will be stimulated to greater exertions in the hope of winning next time. Our county took a long step forward by inaugurating the fair and we owe a vote of thanks to the promoters and managers of the same. I think I can see another profit in stock raising as compared with exclusive dairying in the influence upon our boys. It should be the aim of every one of us to encourage our boys to remain upon the farm. Give them the very best education possible, but teach them that there is no profession or business more honorable than that of the farmer. I have neither sympathy nor patience with any farmer who disparages his calling to his children and advises his sons to seek for something better.

I have been a farmer all my life, as was my father before me, and I am proud of it, and nothing will please me better than that my own boys should follow in the same pathway. The idea is entirely too prevalent, that if a boy is particularly bright his talents will be wasted on the farm and he should study law or medicine or embark in business in the city. While the fact is these bright boys are just what we need upon the farm, and so far as I have a right to an opinion, the opportunities for achieving success are greater today upon the farm than in the crowded city.

And just confidentially, between you and I (if you will pardon a slight digression), we need our brightest boys to represent us at Springfield and Washington; and I hope and expect ere long to see the great agricultural interests of this county represented in our State and national legislatures by intelligent and educated farmers.

The drudgery and tedious routine which is unavoidably associated with the dairy business is naturally distasteful to a restless and ambitious boy, and tends to drive him away from the farm unless something is provided to relieve the monotony. And I know of nothing that will interest him more than the raising of good stock, especially if he has some share in it.

But now before I close let me sound a note of warning.

The present price of farm produce will not continue always. How long no one can tell. But the prudent feeder and breeder, will in the light of past experience, study how, by close attention to details, curtail unnecessary expenses, handling only the best cattle, properly combining food stuffs, and utilizing all waste products, to produce his beef, pork, milk, etc., at the least possible cost. In short, practice the business methods which every manufacturer and business man find it necessary to avail himself of in this age of keen competition. And thus in these prosperous times prepare for the reaction in prices which must eventually come.

Having tried both methods of farming I present to you the results of my experience as viewed from my standpoint. No doubt some of the deductions which I have drawn are erroneous. It is very easy in reasoning from effects to cause to arrive at a wrong conclusion. As did the Irishman, who just before our late election, said that "he voted for Bryan in '96 and got four good years and so he was going to do it again."

It is impossible to map out a course of action, and erect guide posts, saying, "this road leads to success and that one to failure. Success and failure are not entirely matters of conditions or circumstances.

It was said that in our late war with Spain, the brilliant and repeated successes of the American army and navy were due, not to the superior numbers or size of vessels, but to the character of the "men behind the guns." It is just so in civil life, stock farming or dairying or any other business. The successful man succeeds, not because of favorable circumstances, but in spite of difficulties—making each failure a stepping stone to future success.

DOMESTIC SCIENCE DEPARTMENT.

DOMESTIC SCIENCE.

By Mrs. J. J. Southworth, Allerton, Ill.

The Domestic Science association is the youngest child of the Illinois State Farmer's association and is but two years old.

First—I would define the word domestic—meaning home. The advancement man has made in civilized life is due to the value he places on home. When Columbus discovered this great country he found it inhabited by people who made their home in caves and tents that merely afforded shelter from storm. There was little, if any thought of the comfort and sociability of home. Rich and poor labor for a home, not only for all, but for all time, from the cradle to the grave. The home is a shelter and protection no where else recognized. The well being of society rests upon them, they are the support of the nation, the church and all organizations that give blessing and vitality to social existence. On this occasion a particular kind of home is to be considered. A farm home with all its environment, its sacredness, its delusion and comfort. Dear to my heart lies the memory of a home where a quarter of a century ago I went as its mistress, not a Queen Anne cottage with steam and electricity; a little home that was ours, where we planned for a larger and more modern one as prosperity came in the wake of hard labor. Where every bush and tree was planted with the aspirations that come only to the young housekeeper and home maker. In starting this home making business I am purely an American and would count the cost. All farm homes can not be mansions but they can be comfortable and no matter how small the farm is, it should have a neat, little house where the family can be all together and enjoy what to me is worth more than all else, the companionship of the dear home folks. I bless God today for the thousands of farm homes in our land with all the modern conveniences where the rural mail route has made it possible for the best magazines and daily papers to reach us and thereby keep us in touch with the outside world.

Home is a genuine Saxon word and implies much. There is no other in the language that clusters in it many and so stirring meanings. Murmur but the word and the child who was your merry guest begins to wheep. Play but its tunes and the bearded soldier who blanched not in the heat of battle droops and cries, whisper but its name, memories start around it that put fire into the brain and almost break the heart. Not gay, not pleasant, would all these home histories be, and yet humanity can not well spare the memories of them. So fervently does humanity cling to what nature owes it that those who have none make for themselves one in vision. Early home thoughts are the last to leave us. Feeble age has them when it has nothing else in memory. And when all the furniture which imagination puts together has gone to pieces and to dust these not constructed but planted deep down in the living soil of primal consciousness flourish to the last. Even those who have an evil home, soften its many vices and out of the scantiest affection bring forth rays of the heart to brighten their retrospect. I believe our farm homes should be made more convenient and beautiful in these days than ever before. Why not give to the frugal hard working farmer's wife as convenient and beautiful home as her sister in the city.

There is a growing discontent among our young people now, both boys and girls, to get away from farm homes and in many instances we can not wonder. When the treasures which experience has been collecting a few months may seem to take away, some diamonds are left which even the thief time has spared reminiscences that glimmering through bare and blank obscurity from the crevices of youth the past will ever give back to us what is best and most pleasant in our homes. This fact should never be forgotten—what is put into the first of life is put into the whole of it. It is the farm home that is furnishing the young men and women for the city trades and professions. How important that they receive the best ideas of home, that the homes they go out in the world to make and the lives they shall live will truly enrich the world. Our farm homes are yearly giving to the world much of its richest and best blood, best brain and strongest character. I honor the names of these exceptional women whom God has called to lead armies, or save kingdoms or perform work which men have failed to do. But in an age when some misguided women are wanting a wider sphere I gladly remember that the woman whose name stands highest among women on earth achieved her immortality through domestic fidelity and unaffected piety. It behooves us to look well to life and its representations. From every myth, however obscure, we may draw some grand lesson, not alone for ourselves, but for the children God has given us. What we give our children the opportunity to be often determines what they will be. The social and financial problems that are confusing the master minds of today must be settled in this, the dawn of the 20th century by our boys and girls. While we are looking toward the sunset of life they are looking toward the dawn. And we, as Americans, are to give them such a domestic training as will broaden their ideas and strengthen their self-confidence. And as our girls are to be housekeepers and home makers, how necessary in these days of frivolities to give them a good domestic training that they will not feel that a house keeper will be a drudge. Training for home making is all that women want. Home making may come from any source. I do not know of a single accomplishment that is not useful in the home. When we talk of this matter of domestic economy we find our girls must have it. The sentiment has come to stay. We must train our girls to become the strongest and best women in the world, they are ready to take it—indeed demand it.

People used to think the training of a woman came last because she married and went into a home. Our farmer boys need the best wives that can be given them, and in order to keep these broad acres of Illinois up to the front rank 'tis necessary to have the best men and best women to look after them. The training must come while she is young. The young are now, as they ever have been, controlling the destinies of future generations. 'Tis the gay, heart-whole, fancy free girl who will select the husband the mature woman must live with. 'Tis also the impulsive, ambitious boy with his eye on the prettiest girl in school who will select the woman the mature man must associate with down the western slope of life.

And, in the language of a well-known poet, who said of our forefather Adam:

He is looking for someone he hopes he will suit,
To help him eat forbidden fruit;
Some to share his sorrows and joys
And to be the mother of his boys.

This training must come while she is young. After she is 21 to 24 she can not stop to get it. Then somebody is waiting with an open door for her to step in, and unless she has had the necessary training of a home maker ere this she enters on her work only half prepared. Therefore I am glad to advocate Domestic Science, give it to your girls; and in whatever measure you give they will give it back in a ten-fold ratio. The measure of the worth of any life is in the ability of that life to meet the demands made upon it. Only a woman knows how many and varied are the demands made upon her life. Therefore a domestic education has become a necessity. Our girls must be taught to look at some of the problems of life in a different way from that of

our grandmothers. Because these same grandmothers many times were weakened by careless habits, until today we seem to find it necessary to brace up this American nation by pouring into it new blood from other nations in order to make it strong. We must do better work than our grandmothers, for we are better equipped. They had their hands full of work, we have ours just as full, for the world has grown larger and fuller of work. So near to the heart of any nation does the home lay that we have only to glance on France who has been compelled to place a premium on homes, and we will see that unless she looks well to her homes the republic of France will ere long find herself on the eve of a revolution that will shake her government from centre to circumference. Our American girls are to be the queens of American homes. Men build houses but women make homes. Every woman should be a good cook in her own kitchen as well as a lady in her own parlor. Therefore we urge the necessity of this domestic training for our girls, and when she enters a home the door of which is held open by the man she loves she will bless your memory for all time to come.

MRS. J. J. SOUTHWORTH.

Allerton, Ill.

VALUE OF SCIENCE IN THE KITCHEN.

Read by Mrs. Jessie Holmes, Monticello, at 13th Cong. with Platt County Farmers' Institute
December 11, 1900.

An American woman is nothing if not patriotic. True she should not, like the immortal Washington, be first in war, but she may with perfect propriety be first in peace and she has the divine right to expect the first place in the hearts of her countrymen. The importance may be overlooked for a season when the quadrennial eruptions of the political Vesuvius are belching forth their campaign smoke and lava, but when the ballot box has quieted the disturbances and the noise dwindles into mere mutterings of the defeated, then the abiding theme of the age rises like cream on milk, making men wonder if the poetess spoke truly when she said:

"For every baffling problem put,
A safe solution waits."

Experience proves that intelligent mothers will raise intelligent children. No one will dispute that maternal influence and training predominates over the paternal. This truth alone would call for the careful training of woman that she may transmit proper power to her children.

Our labors are indeed manifold and touch upon many sciences of the most subtle order. Chemistry, so intricate to understand, is involved with everyday life of all women who minister to the needs of a household.

Laundry work is chemical and when the applications are made with superior intelligence, the results are swifter, surer and more satisfactory in every way.

In the kitchen chemistry plays an important part since all food is prepared by chemical action of heat, either moist or dry. We are told that all the greatest and best cooks are men. This is very encouraging, but let me slyly whisper in your ears, that the great and good cooks are scarce in rural districts anyway.

However competent and successful men may be as cooks, that fact still remains that the preparation of food is an occupation well adapted to women, and one which claims the attention of all people that on earth do dwell. Owen Meredith states exactly and poetically when he says:

"We may live without poetry, music and art,
We may live without conscience and live without heart,
We may live without friends, may live without books,
But civilized man cannot live without cooks."

Many of these cooks must be women, too. Hence it is this reason the Domestic Science Club appears before you today.

The three principal departments of labor so naturally allotted to woman are the laundry, the kitchen and the nursery.

Cooking is as truly science as anything you can study, but a branch which has suffered too little attention, and we hail the day when all cooking shall be brought to a scientific basis.

A great form that enters into our kitchen life is the word "luck" you'll say "I had the worst luck with my bread today, or I had the best of luck with my cake." When you take your prescription to a druggist to be filled does he hand you the result saying, I had the worst "luck" mixing this or I had splendid "luck" mixing it; oh, no, he uses just what is called for—no more and no less; mixes them as chemistry teaches and the result is always the same. So it is with our cooking. The exact measurements, proper conditions and properly mixed will always produce the same results. Our bad luck as we say comes too often from guessing at measurements, using our ovens when not at the right temperature or not following closely what the mixture calls for. When we see our best scientific cooks observe strictly all these little things, we know it counts for something.

Great care should be exercised in the selection and combination of our food. We know that certain foods give nourishment to certain organs of the body. Foods are divided into carbonaceous or heat force and fat producing foods; nitrogenous or flesh forming, muscle making foods; phosphate, brain, nerve, and muscle foods, and inorganic as salt and water.

The science of cooking and combining our food is one, the knowledge of which does not come intuitively, neither can we depend on the knowledge of our grandmothers. There should be an advancement and acquiring of knowledge in that direction as in all other sciences and arts. There should be as much science required of the one who cooks and serves our food for us as we now require of the one who enters our homes and prescribes drugs to cure us of ills caused by unscientific cooking.

It also requires some knowledge to know how to buy them in the most economical and judicious way. Many people are at the mercy of the butcher and he knows it. Should it be so?

It is a greater accomplishment to step into the kitchen and cook scientifically than to sit in the parlor and entertain so charmingly the most fashionable society lady that ever crossed the threshold of a hospitable home. And when this is thoroughly recognized, the lily white fingers that have become so skillful with the embroidery needle will become just as artful in the mixing of bread.

Therefore if we want the proper kinds, combinations and conditions of our food we must have some one at the helm who understands intelligently what she is doing. Hence this club known as the Domestic Science Club of Monticello Township was organized March 21, 1900.

The meeting was called to order by Mrs. Tidball, ex-president of the Woman's Club, in the club room. The object of the meeting was explained by Mrs. S. Noble King of Bloomington, Ill. Twelve ladies signified their willingness to unite and form a Domestic Science club and now it numbers forty-one.

The following officers were elected: President, Mrs. Bear; vice-president, Mrs. Burgess; secretary, Mrs. Kagey; treasurer, Mrs. Adams. The object of this club is for the advancement of improved housekeeping art, for the preparation of better, more wholesome and nutritious food, to gain a knowledge and use of the best labor-saving utensils and to bring the methods of helpfulness before the mass of the people.

We have endeavored to have the work of the organization as practical as possible. We have certain topics assigned for each meeting, as omelets, breakfast foods, meats, etc. The topics are not only discussed, but the cooking is demonstrated. This is done so that all present may see the work done. One step farther was taken on the evening of September 20th; a special meeting was called at the home of the president. The object of this meeting was

for the purpose of introducing the art of drafting patterns from models, sewing and darning, into the work already begun. It was found to be advisable and the work is progressing nicely under an experienced dressmaker. Twelve models have been sold and we hear of more to be ordered, and that is certainly very encouraging. Our meetings are held on Saturday afternoons, from the hours of 2 o'clock to 5 o'clock. The first is drafting, second sewing or darning, the third cooking.

We hope to see this manual training or industrial work find a place in our public schools. It has already found a home in the Urbana schools and expects to find one soon in Decatur, and why not our schools?

The school board kindly gave the use of the west room in the old school house for the club meeting. The room is equipped with a heating stove, gasoline stove, cooking table and utensils and a long table to be used in drafting and cutting. Some of the ladies have made it more homelike by bringing their rocking-chairs. Great interest has been manifested and much good has already been accomplished.

I here wish to express thanks for the encouragement and help given us by some of the men of our county and State in granting us an opportunity to come among them in our feeble way and present this subject as it has been presented to us. The good deeds and encouraging words of some of our helpers will certainly follow them and their names will certainly be written in the memory of every woman in our State that has been benefitted by the upbuilding and advancement of this work. In the words of another, "Despise not the day of small things, for no one can foresee to what vast dimensions they may grow." The influence we have set in motion will never cease, though none of us may hope to live to realize its full fruition.

"A limpid stream so tiny that upon a summer's day,

A single ox might drink it dry, goes trickling on its way,

Adown the Allegheny's side it gathers strength and pride,

Till in Ohio's river it stretches deep and wide.

On, on, it sweeps, still gaining strength from many a kindred stream,

Till in the Mississippi's tide its garnered waters gleam.

Here borne along with giant force though slow its current be,

It pours a vast, resistless flood into an inland sea.

Thus may our efforts find success from a beginning weak.

New friends rise up and courage take at every word we speak,

Till step by step and inch by inch our cause shall grow and spread,

That coming generations may be wisely clothed and fed;

That home shall reach perfection and our farthest goal be won,

While the future reaps the harvest of our work so well begun."

FOOD AND NUTRITION, OR SOME OF NATURE'S LAWS FOR BUILDING HEALTHY BODIES.

Read at Alledo, Ill., January 23, 1901, by Barbara E. Page, Princeton, Ill.

"Our lives belong to other than ourselves, and we do others wrong in our neglect of health."

Something over forty years ago there used to meet in a little back room, not a block from Porter's corner, a small company of men, and sitting around a good "chunk fire," with feet elevated to the top of the stove, discussing farming, while that good saint, the family horse, stood around the corner out of the wind wishing for a blanket; and at home the cow patiently waited for more leaves to grow on the empty corn stalk. The pig after a breakfast of chipped ice, had snuggled down in a corner of a rail fence for a nap.

These were only bogus farmers, saying, "Behold our hands, brown and callous from honest toil," when their soft whiteness would rival those of a city belle before golf became fashionable.

Other farmers laughed at the "book farmers," as they were called, and worked on, each trying alone to find the best way and to wrest from the earth by muscular force a competence.

Our book farmers have long since gone to their rest, and there ended the first Farmers' Institute association of Winnebago county.

But the seed was sown. Men began to think and confer with each other, consult together as to best methods and compare results, and after years of germinating the plant appeared in the present organization, second to none in the State.

Here the farmers come as to a school, not to be entertained, but to learn from each other and from other brainy men, who have all worked and studied and from experience can tell, each in his line, what seems the best and most profitable method.

But I am not here to extol the gentlemen. They are wise enough in their own conceits.

I want to talk to the ladies, the farmers' wives and daughters.

The men are much more liberal than we are. Women cling to their own and their mother's ways and tools, while the men, less conservative, are on the lookout for new, better and easier ways.

Nearly all other classes are organized for meeting periodically and for discussion of their needs and work, comparing methods and results. The housekeeper works alone, thinking out her own improvements, if she makes any.

Look back fifty years and think of the way farming was carried on. The farmer plowed for his crops and tilled his corn with a single 10 or 12-inch plow; had no corn planter, but an impractical hand planter, usually dropping by hand, covering with a hoe; also dropped his potatoes by hand, dug them by hand, dug them with hook or fork, cut hay with a scythe and grain with a cradle, until Mr. McCormick and John H. Manny (both farmers) came to his rescue. He then had no wind mills or water tanks, and think how well he is equipped today with valuable machinery, the child of his own busy brain and skilled hand. We wonder what would have been the result if the housewives had organized a Domestic Science Association fifty years ago, and they had planned together, and worked for better things, as have the farmers.

Believing that what is good for the farmer is good for his family, we want to interest you in this Domestic Science movement, hoping you will then wake up to a realizing sense of the great good it will be to you, (as others have found it) and study and work among yourselves. For none of these good things can come to us unless we ourselves work for them. You ask what is Domestic Science? Perhaps it is more plainly expressed in the term, Homemaker's Association. It means anything which makes the home or inmates better or happier.

Can you measure the length and depth of that word home? All that it recalls? All that it is to you now? All that it means in the future to you, or to your children? This is the home we want to make perfect, to learn to keep in the best possible manner, yes, the best, in the broadest sense of the word, and make it a resting place for our minds as well as our bodies.

We will not alone aspire to be cooks and housekeepers, but homekeepers. And to do this we must consult together and study, learning from the thoughts of those we can not speak with, the best, quickest, easiest way to accomplish our work. Our first thought should tend toward architecture (and each must take this home to herself), every human being is an architect, building up his body as he chooses, well or ill as he conscientiously works. Every mother should remember this, and teach the child that he can build well, and so insure to this country noble men and women who will guide with steady hand our Ship of State.

Who was it that said, show me a child of seven years and I will tell you what kind of a man he will make, and on the mother is thrown the sole responsibility until the child reaches the age of seven years. The mothers of today are the women who guide the rulers of the next half century, and as they will perform their work, so will the laws be made and upheld, and the more honored our flag will be. Can you tell me in all our country's history of a single prominent statesman whose mother was a weak, selfish, vacillating woman? I find no record of any.

Men are the breadwinners, and to them we leave the care of business and politics. To us give the care of home and family. Let us not try to do their work, but that which they cannot do.

Do our own better, have better homes, better education, happier families, which means better men and women. Means sending our sons and daughters to homes of their own, better trained than we were. Their work made easier because they can take hold of it more intelligently.

A realization that the health and happiness in our households depends largely upon what we allow them to eat, is enough to make all conscious women want to make this a study. But men and women are so busy getting a living, that they have little time to live. Dr. Sir Henry Thompson of London, says: "That more than one-half of the ill health which embitters our lives is due to avoidable errors in diet." Scientists teach us "that improperly cooked food or malnutrition is at the foundation of most of the desire for drink. That it also causes a large per cent of the insanity, and that crime lies at its door."

The labor question is but a struggle for a higher standard of living, scarcely understood, and some times unwisely brought to a climax. Bishop Foster tells us, if we care for men's souls, we must have regard for their bodies also.

And Mr. Atwater says half the struggle is for food. What is food? Food to the mass of mankind, is the satisfaction of an animal instinct, directed solely by physical habit and social custom, to the remainder it means that which taken in the body builds it up, repairs the tissues, or, being consumed in the body, yields heat to keep it warm, creates strength for its work.

The cheapest food is that which supplies the most nutriment for the least money. The most economical is that which is the cheapest, and at the same time best adapted to the wants of the eater. The maxim, that "best is the cheapest" does not apply to the food.

More than one hundred years ago Count Rumford began his experiments on the beggars of Munich, and since others have carried on the work, until today we realize more than ever before, the close relationship and interdependence of mind and body. And that you cannot expect clear moral perception or capacity for work in an ill-fed, poorly developed body.

We very much hope the hour is near when cooking and serving will be introduced into the lower grades of our public schools, both city and rural. This we feel will lead to more intelligence in household management and following it will come a better condition in the homelife. As now many girls leave school at the eight and even sixth grades, to go into the shops, where they remain until they go to homes of their own, knowing just as much about all domestic affairs as they did when they entered the public school at six years of age.

The value of this work has been proven by what has been accomplished at Bloomington by Mrs. J. Noble King and her co-workers; at Urbana by Mrs. Dunlap and other ladies, also by the women of other towns in central Illinois, where they either taught themselves or paid a special teacher, until the school boards became convinced and said, we will pay for it, the good work must go on. Those of us who have not had the benefit of such instruction must supply the deficiency by earnest investigation, and daily application of principles learned. Perhaps the easiest ways to do this is to organize a D. S. A. Two years ago at the institute at Champaign the association was first organized, and as it was desirous to reach all farmers' wives, it was thought best to organize county associations affiliated with the local institute, holding meetings at the same time, constituting a branch of that body, as they kindly invited us to do.

In furtherance of this plan 50 counties organized, but 30 dropped off, the germ dying, Winnebago among them, but the last year the loss was more than made up, and 60 counties were interested. But this did not seem to fill the requirements; we needed to meet more frequently. Township clubs were then started, but neighborhood clubs are better, where they can meet once

in two weeks. These should be made as informal as possible; choose a president and secretary. Then a subject for discussion, which is of mutual interest. Announce at each meeting the subject for the next, and then each take part, try and get an expression from every member, and make each feel that it is their meeting. Each come prepared with a note book and pencil to take down anything she cares to remember and wants for further reference; also bring the question she is puzzled over to drop unsigned into the question box. Any question answered will teach us to make better homes, to rear healthier, stronger boys and girls, to prepare more nutritious foods, provide more attractive surroundings, and increase the feeling that home is the best place in the world.

Shakespeare said:

"In the name of all the gods at once
Upon what meat does our Cæsar feed?
That he has grown so great."

In Shakespeare's day the housewife did not know what foods were body builders and brain nourishers, or how to prepare the food in a nutritious economical, palatable way, as we do today, and we can learn much more by sending to the United States Department of Agriculture at Washington for Bulletin No. 23, Food Its Nutritive Value and Cost, by Prof. Atwater. We will then have the valuable results of his experiments and the information in a plain concise form. Also, charts showing at a glance the proportion of food value in different foods, for the same price. Also, a dietary of food material approximating the standard required by the average well man. Charts which show the per cent of food and waste in different meats, as skin, bone, fat, etc., and you will find that it is not the high-priced cuts which are the most nutritious, but the cheaper meat, which is within the reach of the laboring man who needs the strength it gives, viz.

Neck of beef, value.....	6 cents per pound ...	4.17 nutritions.
Round	15	1.67 ..
Sirloin	25	1. ..
Mutton	22	1.14 ..
Salt pork	12	2.08 ..

But you will find it interesting, studying these charts for yourself, and while you are sending, add to your list No. 85, Fish as Food, No. 34, Meats, Composition and Cooking. There is no charge made for them. Uncle Sam is very good to scatter the knowledge he gains among his children. The meetings may seem more interesting to some if you vary your program and subscribe for the "Oread," "The Boston Cooking School Magazine," or "The American Kitchen Magazine," either of which contains much useful information and many practical suggestions, besides a continuous line of work and demonstrations designed for club use. Some day we hope to have our food served economically, in proper proportions and dainty form by our butcher, baker and grocer; but until that happy day comes, the housekeeper must wrestle with that problem in her own home, and through all she must remember that food to be digestible, must be properly and palatably cooked. But when the first principles of nutrition are mastered the rest of the lesson will be easily learned, and the daily food supply will almost unconsciously be regulated with regard to the needs of the family. But Domestic Science means more than cooking. It means to keep on with the work King Solomon talked about so long ago, and so signally failed to put in practice. We must teach our boys to be good, clean, honest christian men, our girls to be pure, self-forgetful, earnest women, ever ready to extend a helping hand and scatter happiness along their pathways.

Serious women ask for knowledge which gives them greater power for usefulness. A woman cannot emancipate herself from nature's laws; she must accept them, but in their right conception is a world of liberty. The future makes great calls upon her, and greater knowledge of science and nature will bring added respect for the most trivial duties.

What she needs is to get control of her work. Housework may be simplified as soon as a body of thoughtful women think best to make its simplification their study. Less advance has been made in household matters than anywhere else and a re-adjustment is sadly needed.

This is what the Domestic Science movement has come to accomplish. Meanwhile we must remember the young girls who have not received the training which their brothers have gained along the lines of the work they expect to engage in. The sister goes to school, perhaps college, is taught music and art, returns soon to go to a home of her own knowing nothing of cooking or housekeeping. Or perhaps she is the daughter of a man unable to help her, after she is old enough to care for herself. Our schools have done nothing to educate the hands; she has faithfully studied books but learned nothing of what Domestic Science would teach her. Do you think that girl capable, be she ever so willing, to keep house and bring up a family as she ought?

Would you take your horse to a blacksmith however well he might understand the anatomy of the horse's foot, who had never learned to place a shoe or drive a nail? If your son had taken his degree in college and scholarships in Germany, yet had never learned to drive or operate a corn-planter would you enjoy having him put in your corn? How then can you expect your daughter or any other woman to do intelligently a work she has never been taught, either in school, or by that more unrelenting teacher—experience—to do. A pathetic incident came to my knowledge the other day. A little mother 17 or 18, perhaps, came into the woman's exchange, carrying a tiny baby in her arms, and stood there looking longingly at some homemade biscuits. After a time she almost whispered, "How much are they?" "They do look so good, but they cost more than bakers—I didn't know it, and I thought if I surprised John with them for supper, he'd be good natured tonight and stay at home." "Will you have them?" "No, this is all I have" showing a few pennies. "Oh I wish I knew how to cook something—it makes me hungry to see them, and perhaps John would feel better." And the frail child, she was but a child bearing the duties of a woman, passed out, to get her baker's bread, and home. We can only imagine that home, where light house-keeping was practiced from necessity, and I wondered if John went down to the saloon or bowling alley that night, and if sewing and cooking were part of the curriculum of our public schools, would he not have been content to have remained at home happy with his wife and babe.

Statistics show that \$10,500,000, or \$150.00 per capita is spent yearly in the United States for food and clothing; most of this is spent by women. Ought she not to be well instructed to bear wisely this trust? The well-to-do woman should here help her less fortunate sister, who by force of circumstance seems obliged to purchase where she can get the greatest amount for her money, even when the surplus is made up of inferior fagus, and often injurious material. Let every woman find out if she gets her full weight and by simple tests whether her goods are pure and as represented, both food and cloth, and then stand by her dealer, helping him to be honest, be willing to pay a fair price, not seeking the cheapest, which is sold so cheap that it can not be produced except by adulteration or "sweat shop" labor. Where the demand is for honest goods, bogus goods and dishonest dealers will be driven from the streets. Let us then hasten the day when sewing and cooking shall be added to the curriculum of public schools. Also, may our influence help to establish center township schools so that the scholars from rural districts shall have equal advantages with the city children, and until that is accomplished and for the benefit of older women, organize our neighborhood clubs and carry on the work making such improvements in our homes that even the "8 hour" system can not cause the dismay in our households, which it did in that of the labor leader, who on entering his house, cried:

What! No supper yet? "No," said his wife calmly, "you will recall that I began work at 6 o'clock this morning."

"Well, what has that to do with it?" he demanded.

"My 8-hour watch expired at 2 this afternoon," she answered.

MRS. W. L. FRISBIE.

Rockford, Winnebago County, Illinois.

Delivered before the Winnebago County Institute, Jan. 16, 1901.

HIGH EDUCATION FOR WOMEN AS REGARDS BETTER HOUSEKEEPING AND HOMEMAKING.

By Miss Lina Brenneman, Minier, Ill.

If the busy housekeeper is ever justified in allowing her thoughts to ramble into poetry and song, in utter forgetfulness of cooking and sweeping, washing and baking and housework in general, or if perhaps her beauty loving nature, bears her away in spite of herself, out into field and grove and woodland, it must surely be at this season of the year when the earth is all aglow. Let her go, friends; do not chide for neglect of duty, the home and its inmates will suffer intensely while she is away, but it will not be long and she will come back laden with trophies to brighten the dark corners and the work will fairly fly with new zest, fresh vigor. This is so often designated as the sad season, but to me the ripened grain and falling leaves only speak of the wonderful promise of spring gloriously fulfilled. We are standing today on the threshold of a new century; in the past generation we have come to be known as a nation of hustlers, an ambitious, energetic race; what will this new century bring to us, what will it bring to our women; how will they use or abuse some of the privileges accorded them, are among the questions confronting us. We are proud of our women, they are as fair as any in the land; they are daily showered with compliments from the wisest, the most leading men of the age; they have won for themselves the laurels, noble, brave and true; they have proven that they can fill any position of honor, enter any trade or profession, and do it well. The free independent spirit of our American women is commented upon by all foreign nations; doubtless when we go abroad and are questioned about our nativity, we shall answer with pride and satisfaction, United States of America. We love to talk about these triumphs of ours; we delight in flaunting them before the astonished gaze of an admiring world. But my friends, what about our faults? We like to keep them in the background as much as possible, do we not? They are like bad weeds, however, the more we crowd them back the more persistent they become and they seem to have a fashion of flourishing in any kind of soil. The only way to get rid of them is to march right in and exterminate root and branch; even then we must be constantly on the watch lest some stray seed or rootlet will seek to avenge its parent start afresh with renewed energy; and it seems to me that once in a while it is good for us to drag out our faults and talk them over, so today we will ask ourselves what have we neglected, what has been left undone; is there any work waiting that will carry us still higher in the scale of true civilization? Oh, my friends, never for a moment should we allow ourselves to think that our people or our country are perfect. Just as truly as we have reason to be proud that we are American born and citizens of these United States, just so surely have we need to stop in our mad rush for riches and fame and think seriously of the one work of women which from its very nature, its intricacies and its importance, makes it paramount to all other accomplishments and peculiarly adapted to their heads and hands. I say we have need to stop and think are we doing all we can to promote the work of housekeeping and homemaking?

Has it ever occurred to you my friends that with all our accomplishments, our intelligent ideas and our much talked of coolheadedness, which latter compliment was perhaps meant exclusively for the lords of creation, we are in a measure a vast regiment of extremists? That we are very apt to carry any one reform on and on to the utter disregard and neglect of the many small opportunities for doing good which are constantly crossing our path. We do this more or less in all lines of business, even in fashion. By the way, do you remember how we used to make our dress sleeves so tight we could scarcely move our arms, and how we made them larger and larger until we were obliged to go through a door sideways? Now see what we have come to again, and these are not the latest; they—but never mind, we are not discussing the latest fancies of Dame Fashion just now. Of late years the cry of education, more education, higher education, has been ringing in our ears until the very air seems to vibrate with the words, and it would almost seem as though it were impossible to lead a useful and successful life unless we were thoroughly schooled. Now my friends, I would not underrate book learning; I would not undertake to criticise the good work that is being done by our colleges, universities and high schools, but I shall try to show you that their teaching is not what we need in our work, and until they see fit to change their course of study somewhat, it seems to me their services are not essential in promoting the welfare of housekeeping and homemaking. We are living in an era of progress, and the fact that women have presided over homes since time began, is no evidence that they are perfect in the art, and it goes without question that we need enlightenment in that direction, because we have thousands of happy homes where light and sunshine prevail, is no proof that we have not also thousands of unhappy homes where work is drudging, and where the art of making life worth living is unknown, and all things considered, it seems only reasonable to presume that the best as well as the poorest homes are not exempt from improvement. They tell us that housework is going to be reduced to a science; why, my friends, hasn't it always been a scientific art? And, really our grandmothers did much of their work on scientific principles, only we didn't know it then. They tell us also that domestic service will be taught in our public schools; the time is as yet indefinite; and we will not discuss the advisability of such a course, though to me the plan seems an excellent one; for the present we must help ourselves and one another in deciding what sort of an education is needed and how it may best be attained to accomplish desired results.

Since the various avenues for the advancement of women have been opened, housework has for some mysterious reason no longer been considered as one of the accomplishments of life; hence no provision has been made in our public institutions of learning, for the development of household talent. It has been menial labor; women have been led to believe that when all other means of gaining a livelihood have failed, and not till then, they may try domestic science; today we do not give our most accomplished housekeeper one-half the credit that was accorded women of the same rank years ago. Every paper we pick up contains numerous accounts of happy marriages and invariably when the bride is designated as an accomplished young woman, she is either a skillful pianist, an artist of note, a fine elocutionist, a graduate of the high school, that university or yonder college, but not once do we see that she is an exceptionally fine cook and excellent housekeeper; not once do we see that her homemaking qualities are among her greatest charms. And these are the essentials for the future welfare and happiness of that new home whose foundation is being laid in the glow of youth when everything seems bright and fair and prosperous; do you say this mission proves nothing? That the housekeepers' art is an understood thing in a girl's education? Well, perhaps it is, but I am sorry to say it often turns out to be a sadly misunderstood thing. Mothers have been taught that they must educate their daughters; yes, and they are educating them to become typewriters, clerks, bookkeepers, stenographers—anything to save them from the necessity of working out, which means doing for a certain sum of money per week what nearly every girl must sooner or later do for some man for love's sake. You will say, perhaps, that her love will teach her all these things. Perhaps, but will it not be infinitely better for the man's comfort and woman's peace of mind if she can go as keeper of this new home with several

years experience, instead of having to enter as a pupil? There comes to my mind the words of the man, who said to his wife that poetry and flowers might be beautiful accessories to a well cooked dinner but they would never in the world make up for a bad one; it was a bitter lesson, my friend, but it took deep root.

Housekeeping, homemaking and married life and its attendant duties—think it out for yourselves, my friends, and then tell me if it is right to encourage our girls or even allow them to take upon their shoulders these responsibilities without due preparation. Let me repeat, the most important elements in housekeeping and homemaking is the actual work itself; that part which comes every day, year in and year out, and that is the very factor which has been most neglected since the great educational war began. Now who and what are to blame for this state of affairs; surely not the men, for we have yet to meet with the man who was not proud to say that mother, daughter, wife or sister were skilled in household arts; my friends, they like a well cooked meal three times a day and they enjoy every possible home comfort too well to make any disparaging remarks in that direction. Is it our fault then my friends. At the risk of making myself very unpopular for a few moments, I am going to assert that this education business lies at the bottom of the greater part of all this evil, inasmuch as it has been carried too much in the wrong direction. I do not wish to impress you with the idea that our country is actually suffering for women to do housework, or that all our farmers' daughters are rushing off to college, leaving the house and home to get along as best it may, but we have not made the progress here that has been made in all other lines of business, and there is many a woman doing housework today not from choice, but because it seems to be the only avenue open to her, and she considers herself a drudge, bemoans her hard lot and does not perform her task with the cheerfulness and grace that would be possible had she been educated and trained to see how important a work it is, what grand possibilities lie therein and that she is not only toiling for others with no other compensation, save the paltry dollars, but that she is in a position for storing up knowledge unestimated. It is impracticable to send the great majority of our farmers' daughters to college; this is such a busy world and there is always so much that wants to be done right away that they cannot be spared from home, and often too the family purse is too meagre to afford the extra expense, and it is wrong for you, my dear young friends, to brood over this as though it were a dreadful calamity and you were being deprived of the very elixir of life.

I wish that I might be able to impress you with the thought that the crowning ambition of every young girl's life should be, to become efficient in the domestic art and that the fundamental principles of good housekeeping be not in scholarly training, but rather in knowing how to perform the thousand and one tasks, that fall to every housekeeper's lot, with neatness and dispatch; that it is more important to know how to cook and serve a meal in an appetizing, inviting manner, than it is to be able to recite the names of our ex-Presidents backward and forward and from the middle up and down, or to know all about the Seven Wonders of the World, or anything about the ancient history of Rome, or any of these things that do not belong to housekeeping directly, though some of them may work in charmingly as side issues and we shall probably touch upon that later on. For some unaccountable cause we have given vent to the idea that education meant solely a knowledge of books and that higher education meant more books, while visions of diplomas from high schools and colleges floated through our minds; in a general sense of the word this is correct, but listen to these words from Daniel Webster: "Knowledge of books does not imply all that is contained in the large term of education, the feelings must be disciplined; the passions are to be restrained, true and worthy motives are to be inspired, a profound religious feeling is to be instilled, and pure morality is to be inculcated under all circumstances."

In this age of enlightened civilization it would hardly be wise to suggest that higher education, even in the common sense of the term, was useless, and worse than folly to admit that the ideal homemaker and housewife could possibly be an

ignorant woman, but to give countenance to the impression that years of hard study and close application to books, that travel and sight-seeing and perhaps a journey or two abroad are essential, or I may even say desirable in this work is surely very erroneous, for there is nothing in all these educational elements to foster not love of home, but pride and pleasure in household work and homely tasks. To be sure we have many model housewives and lovely homemakers among our college bred women, but they have become such in spite of and not because of their education; all must admit that our schools and colleges of today educate away from domestic service, inasmuch as they ignore it entirely. Were this form of teaching as necessary as some people maintain, the outlook for we farm women would be deplorable indeed, for no one knows better than we do what living on the farm means, rich or poor, old or young, no matter how much we love the farm and its surroundings, we can never be blind to the fact that it is a busy place, that it takes excellent planning and perfect system, to get each day's work out of the way and leave a little time for rest and recreation. And if a mother can not do her duty by her daughters, if she can not train them in such a way that they may one day reign queen in a home of their own unless she gives them a finished education, tell me, if you please, who is going to wash dishes, make beds, cook, sweep, wash, mend, etc. Don't we know better than any one else that it is next to impossible to hire help for domestic purposes, and don't we know also that competent experienced help is a rarity? And furthermore, my dear sisters, you will never mend this matter so long as you persist in treating the girl who comes to work in your kitchen as though she were a machine, or on the other hand so long as you persist in throwing your head in the air and telling the man, be he stranger or friend, who comes to your door and humbly begs for the help of one of your daughters a couple of weeks, "No thank you sir, my girls do not work out." No wonder then that we must hear young girls say, as I heard a short time since, that "I'm not going to work in anybody's kitchen nor in my own, some one else can do my kitchen work," and ladies and gentlemen, is there any wonder or any narrow-mindedness connected with the thought that presents a strong plea for thorough education along this line of a woman's work? Housekeeping is neither poetry nor pastime, but downright earnest work, and it behooves us to call a halt and begin to educate in a different manner; for there is a form of higher education that will do more toward raising domestic service to its proper position than all the school training and book learning of the world put together. It is the education that springs from good training, from experience and observation, from good and pure thinking, from sound common sense and good judgment.

When a woman begins to realize that "love of home" has been the inspiration of all that is most beautiful in art, music and literature; that the home has long been recognized as important beyond estimation, in its relation to society as well as individuals, and the character of a nation is looked upon as an index to the character of its homes; that the home is the school for the culture of all that is best in us; that it is the basis of all that is valuable here on earth, and that there can be no home without a keeper; more wonderful still that keeper must be a woman. When she learns to look upon housework as an accomplishment instead of a drudgery; when she comes to understand the full truth and beauty of the words, "Who sweeps a room as by God's law, makes that and the action fine;" when she begins to understand the importance of all the insignificant little tasks that belong to every well kept house and home, that they are the foundation to future success; when she understands the full glory of the words housekeeper and homemaker; that it is an accomplishment any woman may well be proud of; that she who reigns over a well kept home is enjoying a priceless privilege.

My dear friends, some one has said and said truly, "Whenever you are tempted to underrate the housekeeper's calling, remember the world agrees with Franklin, who said, 'A house without a woman and firelight is like a body without a soul or spirit,'" and if we would only give this subject a little earnest thought there would surely be an end to this mechanical way of performing home duties, while all the while we are thinking of some great talent that is wasting itself on the desert air. Talent—cultivate it, my friend, to the best of your ability and time, and use it as an element to brighten your home.

The world will get along very well without it and your friends will derive untold pleasure from your little talent, and it need never be called lost or wasted. Mothers, teach your daughters all the good housewifely arts you were taught by your mother and all the new and convenient ways of doing things you learned by your own experience. Teach them all the good qualities requisite to the making of a good housekeeper and homemaker, and they are many, to the best of your power and ability, both by example and precept. Teach them to be selfreliant, cheerful, not only when the household machinery runs, like clock-work, but teach them to cultivate cheerfulness under the most trying circumstances. Teach them the sin of fretting, fault-finding and worrying; teach them that "there is nothing so kingly as kindness" at home as well as abroad; teach them that the crying need of our country today is not for better business women, but for more capable housekeepers; bring them up in such a way that they will stand in open-eyed astonishment if any one essays to call housework a drudgery. Drudgery! All work becomes that when we, whose duty it is to perform it, are so conceited as to sit calmly down, with folded hands, to await developments. True, there are many disagreeable tasks, but are they any more unpleasant for me than for you? and in what trade or profession are they lacking? Life itself is not all sunshine and roses, and even the roses sometimes have thorns.

No woman, though she be the wealthiest and most highly educated lady in the land, has any right to consider herself too good to assist a less fortunate sister in an honest task when the occasion demands it; we cannot deny a certain class distinction; years of heredity and refinement can never go for naught; but ought not those who enjoy this privilege show their breeding by trying to lift others up instead of trampling down? Surely, my friends, we women need to learn to exercise more unselfishness, more sympathy, more charity in every way toward one another and it rests with the mothers of today, the maiden aunts, and the young girls just budding into womanhood, to do this, each in her own quiet individual way. Teach your daughters that to be a good wife means a bended will and a tenderly considerate selfforgetfulness; that to be a good mother means pain of body, unending faithfulness to absorbing duty and the offering of mind and soul and heart on the altar of maternal devotion; finally teach them anything and everything, that will tend to broaden and sweeten the home life, and do try to "practice what you preach" and always cheerfully and penitently admit your own faults and failures; the impress of many a carefully taught lesson is lost by neglect of this; not long ago in some journal or other I found a little sketch, which brings out vividly the keen sense of observation our little folks have and the necessity of older people guarding deed and tongue. A lady out shopping went out of her way to meet a small boy whom she had seen robbing a bird of her nest and eggs; she lectured him kindly and wound up by saying: "how sad and lonely the poor bird must feel at the loss of her nest." With a quick glance the boy answered: "Huh, she don't care; she's on your hat." And mothers, do not think you are failing in your duty, if you for one cause or another must take your girl from school at the age of 16 to assist you in your household tasks; our colleges are turning out excellent teachers, and your daughter will have an average practical knowledge of books by this time, enough to take her safely through emergencies if she makes housekeeping and homemaking her lifework; so long as our girls will insist on marrying at 18 and 20, they need this four years course in the school of Domestic Science, more than anything else; not a theatrical course but a practical one; then there is so much in the way of education wherein we can help ourselves, that the shortening of our school days need never be a stumbling-block to future success. And do not allow yourselves to be led astray by those who are telling you that mothers are not capable of teaching their daughters to cook and keep house, because they themselves were not taught, for those who have ample time and money to give their daughters a special course of training in this work it is all well and good and praiseworthy if they see the necessity of doing so, but let us not place such a course on the list of essentials, for then, ladies and gentlemen, we should discourage twenty mothers and daughters where we would encourage one. Your own good judgment must tell you, my

friends, that it is impossible or at least impracticable, at the present time to give all our daughters this advantage, and anyway it seems to me any mother who is worthy the name can teach her daughter manifold duties appertaining to the house and home which only a mother can teach, and if she awakens to a realization of her own shortcomings then let mother and daughter study together for mutual improvement.

I firmly believe that it is possible for any woman to become a good cook and neat housekeeper and a happy homemaker by her own individual effort, and the help that can be gained right in her own home, or in the home of some one else, and the aid of books and periodicals that come under our daily notice; experience, my friends, is the best teacher we shall ever get, and practice, you know, leads to perfection. How often we hear a mother, with the light of love shining in her eyes, say that she is determined to give her girl a good education if she gives her nothing more; a beautiful ambition for a mother to have, but, alas! how often is the most important part of that daughter's education so utterly neglected that she finally comes to actually despise and look down upon the work for which she and all her kinswomen were created; the work which must be done, and which should be well done, if we, as a nation, are to keep on growing in health, happiness and prosperity. And, I would have you grasp this truth once and forever, that the one great secret of a happy home lies in a kindness of spirit and a loving thoughtfulness for the comfort of those about us. Oh! my friends, to those of us who have ever known the protecting influence of a good home, it is unutterably sad to think of being homeless, and we should strive hour by hour, and day by day, to make that retreat a veritable Eden.

Of great help to housekeepers are the Harion's Household magazines; they fairly teem with helpful hints and current news, and in the social letters we get glimpses in the lives and homes of some of our sweetest, truest, purest women, who perhaps could not be induced for love or money to stand up in public and give the whys and hows of their success. Reading, good reading, is a great stronghold to mental culture, and will do much to raise our minds to something more beneficial than the common-neighborhood gossip; a sympathetic interest in the affairs of our friends is all right, but needless battle and idle curiosity is a nuisance. I once knew of a woman who was always right on hand to offer her services whenever a case of sickness broke out in the neighborhood, because it gave one such an opportunity to look right in the heart of a woman's household. It is needless to say that her coming was considered anything but a blessing by the afflicted family, for no woman wants the sacred precincts of her home overhauled by a scandal monger.

Yes, my friends, I would advocate a fair amount of reading for every housekeeper whenever practicable, but I would not sacrifice time that should be given to absolute rest, nor would I neglect really necessary duties to gain that end; neither am I at all enthusiastic over the plan that is so often suggested to busy women, viz.: Pinning a newspaper on the wall and gleaning from it while going about your work. I think I gave that plan a thorough trial and call it a failure; in the first place the work in hand takes just twice as long to complete, and secondly we are apt to make dreadful blunders by trying to do two things at once; "a place for everything" is a good motto, and "a time for everything" is equally so. I once broke a handsome dish trying to wash dishes and commit a poem for recitation at the same time.

Speaking of educated women, I once read of a schoolma'm, who married a farmer, and who afterward remarked that while on the farm she used to become so weary of thinking her own thoughts over and over that she nearly stagnated. Ladies and gentlemen, there is a tender place in my heart for all teachers, but this one surely was one in name only. If a so-called educated woman must tire of her own thoughts and stagnate on the farm, what are we to do? Things are getting serious, sure enough. Why, if there is no book to read and no newspaper to gather new thoughts from, "go out into the open air and list to nature's teaching." But we will not let extreme notions like these run away with our common sense nor take up precious time. On the other hand, you have met, all of you, scores of intelligent women, delightful companions, one might almost say brilliant conversationalists, the very light of their homes, who perhaps never saw the inside of a university

or college. Of course all this ease of manner does not come by chance and is certainly an education in itself, the most lasting and useful any one can have, and I repeat the tuition is free and the teachers are everywhere in the school of experience and observation, the keeping in touch with the country's progress; the casting out of the bad and retaining the good; the eager grasping after bits of wisdom that lends to life its sweetest charm and makes man feel as though he could enjoy living forever and ever. Then there are hundreds of women, mothers who religiously look after the mental training and physical comfort of their little ones, who do their utmost to make home happy and precious for them; who are cheerful, bright and entertaining, who have a smile of welcome for friend and stranger, who would gladly share their burden with some one, if only that some one could be found, who do their best under all circumstances and are happy in doing so, even the weekly paper so often lies unread and the mother's meeting and housekeepers' club goes unattended. Is it right, is it just, that then women should be classed ignorant because they have been obliged to drop music and literature and so many of the gaities of their girlhood? Remember that motherhood is the crown of womanhood, and they can well afford to let some of life's pleasures pass unnoticed when they have so much to be thankful for, so much to love and cherish right in their own homes, and remember also that they are attending to the most important part of their business, that industry, frugality, morality and social purity abound in these homes as well as in any other, and they are all important elements of high civilization and consequently true elements of good, and we have no right to chide for the neglect of those minor accessories which they, too, admire, but can at present find no time to cultivate. Once more, ladies and gentlemen, allow me to repeat, let no one carry away the impression that I undervalue higher education such as our schools and colleges give; I admire it very much especially if it be of the heart as well as of the head; but since this is such a busy, practical world, it would surely seem as though the trend of our knowledge should be such as will conform to the best interests of our work, whatever it may be.

Ladies and gentlemen, I thank you for your kind attention and sincerely hope I may have been able to strengthen the cause of housekeeping and home-making, for I always feel a little guilty when I leave home for work of this kind. In my own home we can usually oil the wheels of the machinery, so my mother can keep them running quite smoothly for the short time I am away; but all around us are busy mothers with more responsibility than one head and one pair of hands should carry on, and I am undecided as to whether it would not be better to give to them the time devoted to this work.

"A man may build a mansion,
And furnish it throughout;
A man may build a palace,
With lofty walls and stout;
A man can build a temple,
With high and spacious dome,
But no man in the world can build
That precious thing called Home.

So it is a happy faculty,
Of women far and wide,
To turn a cot or palace
Into something else beside,
Where brothers, sons and husbands tired,
With willing footsteps come;
A place of rest, where love abounds,
A perfect kingdom—Home.

THE POCKET MEASURE.

By Mrs. Paul A. Enslow, Mason City.

In these days, when the men, and a greater part of the ladies, have their thoughts turned to politics and the coming election, the subject of "pocket measure" sounds considerably like it might be political.

But do not be frightened, gentlemen, for you will not be obliged to listen to a political harangue from a woman. If it does have a savoring of expansion, imperialism and 16 to 1 it's the expansion of the sphere of women, and the imperialism exhibited when the farmer sells the crop, puts 16 dollars in his own pocket, and hands 1 to his wife; yet I'll venture to say many of the ladies would be thankful if they received such a division.

Politics has no part in this discussion.

It's the measure of the joint pocketbook of husband and wife, or perhaps of the two purses—the husband's and his wife's.

To start with, I wonder who keeps their purse the best filled, the husband or his wife? And which of the two expends the most of their portion for the actual needs of the family?

I have often been told that women are stingier than men, that they will stand and wrangle over a nickle, are constantly on the outlook for bargains and reduced prices, etc.

Now I didn't believe it, I do now. In the first place I satisfied myself it was the case, then I began to inquire why? It was a humiliating concession, for I knew by nature a woman was as magnanimous and generous as a man.

Why then should she wrangle over the spending of \$5.00 as a man does over \$50.00?

First, let me ask why is it that when a woman starts out for a journey, be it long or short, she must needs think and plan for days for that trip. She washes, irons, prepares her Saratoga trunk, her band-box, hand-bag and umbrella and is all tired out, while a man dresses in his best suit, carefully places two clean collars (that his wife has prepared for him) within his coat pocket and is gone. Its just this: A woman's wardrobe necessarily consists of so many small articles, all the trunks, bags and boxes she takes may not represent more money than his one good suit and two extra collars, but it takes infinitely more work to get ready to go. And so you will notice that a woman's life is made up of small affairs. She must needs buy many articles with her five dollars and therefore she counts the cost and calculates how far it will reach.

Notice the utensils with which she works, small again as compared to her farmer husband's machinery; she cultivates the garden, small as compared to the broad acres of grain. She raises the poultry, and the small children. When they get larger they can go with papa but "You are too small yet," they are told. Did anyone remark, "If you take care of the pennies the dollars will take care of themselves?"

Have you a mortgage on your farm? When the farm was bought and the mortgage placed there didn't you say to your wife, "Well, Mary, we are in a position now where we will have to economize, lets see. We must sell eggs and butter enough to buy the groceries, and I guess I won't need many new clothes this season. You can get along without any extra, can't you?" Yes, Mary does make butter, sell eggs, put up fruit, raise chickens, turkeys and vegetables; so the table is kept, the grocer's bill all paid and some money coming in. Much sewing must be done if the family is large, and most farmers' wives manage to do all the plain sewing. So much for her work.

How much capital does she have invested:

She has a stove.....	\$25 00
A sewing machine.....	40 00
Churn and milk pans.....	5 00
Cooking utensils in general.....	15 00
Total.....	\$85 00

What does the farmer have for his work:

Binder.....	\$125 00
Mower.....	45 00
Corn-planter.....	40 00
Rake and wagons.....	75 00
Plows of all sorts.....	60 00
Pulverizer and harrow.....	35 00
Harness.....	70 00
Four horses.....	300 00
Total.....	\$770 00

These estimates of course do not include numerous small articles which are used individually.

Note the difference in capital invested: Farmer \$770; wife \$85.

Now, how do they take care of their implements? You don't have to ride three miles from Mason City to see corn-planters setting at the end of the row, where they finished planting the corn; you also see mowers, binders, plows, etc., out in the elements.

Does a woman take her sewing machine out, in the shade to sew and leave it out until the next day? No indeed, it might need repairing within the next year and her worthy spouse would recall that little outing in a very uncomfortable manner. How long does this sewing machine last? Oh, from ten to twenty years, sometimes longer, according to amount of use and patience of owner.

Do you know, I heard a man brag he had used his binder eight years and that was twice as long as his neighbor used his. Reflect, \$125 every four to eight years for a couple of weeks work each year.

Of course all men are not so careless about sheltering or caring for their machinery as some of the cases noted. More and more the farmer is realizing the need of proper shelter and care of his machinery. It's money saved and therefore earned.

Does a man fail in business, or as we are speaking of farmers, fail to make money? The first question asked is, is his wife extravagant? Perhaps she is. There are too many women trying to appear better than their next neighbor, and a few who care not for debts or how the money comes, just so they get it. These latter are unworthy the name of helpmate to any man and are a detriment to society. Usually I believe the wife does not know the financial condition and because the over-indulgent husband cannot bear to cross her, keeps her in ignorance of the true state of affairs and allows her to indulge her taste for luxuries which will stand as a mockery when the truth is revealed.

Would it not be better to say, "Come, now, let's make a financial statement; say we have earned so much, we have expended so much and have a balance of so much; what portion do you need for the coming months and how shall we invest the surplus?" In fact make a business partner of your wife and see if you are not happier and more successful as well. We are interested in the work of each other. Every farmer here is proud if his wife has taken a premium on her handiwork, and every farmer's wife is proud of the fine quality of grain her husband has raised.

There is a ruinous habit indulged in by some. It is the credit system. You are short of money; you go to the merchant and run a bill. Aren't you always astonished at the magnitude of that bill when the reckoning day comes? Can you always meet the bill? Are you training your children in this manner? Wouldn't you really miss the money less, spend less and help the merchant more by paying cash? If you are in haste to pay off a mortgage, pay cash. If you are saving to buy a farm, pay your merchant cash.

Not long since I heard a woman remark that she was doing some extra work because she wanted some money of her own. Ladies, it made my blood boil. If a woman takes care of the children, cooks the meats, keeps the house neat, sews, washes and irons for the family, and has to be made feel every time she wants a few dollars to buy food and clothing for said family or for her own especial use, that she has no money of her own, she is either treating her husband very badly not to make him understand she has earned money of her own, or else she has married a brute. This reminds me of a story I recently read. A bright youth remarked to a friend, "Mother gets up, builds the fire, gets my breakfast and sends me off to work, then she gets father up, gets his breakfast, and sends him off, then she gives the other children their breakfast and sends them to school, then she and the baby have their breakfast." "Are you making much money?" remarked the friend. "Oh, yes, I get \$2.00 per week and father gets \$5.00 a day." "How much does your mother get?" "Mother! Why she don't work for anybody." "I thought you said she worked for you all?" "Oh yes, but there's no money in that."

Too many boys are being raised to think what mother does, doesn't count. The time has come when we must look upon this as a serious problem. Men are complaining that the women are taking up all the occupations for which they are physically qualified, for mentally they are equal to any.

This is not as it should be. God never intended the woman to go away from the home to earn wages. She is the homemaker. A man might keep a house well, but he can never make a home. It takes a woman to do that. Look about you, how many widows keep a home and raise a family of children, and raise them well. How many men can do as much? Can you conceive of a home without the feminine touch, without the mother.

Women are much happier in the home, and a true woman does not mind the work so far as she is physically qualified, but they are seeking employment away, because they too have had a taste of the imperialism of which we are hearing so much. Gentlemen, if you want happy homes make your wife a partner in truth and she will be content to be a wife, a mother and a true homemaker.

HOW SHALL WE LIVE?

Read by Mrs. Jennie Barlow, Bloomington, Ill.

I shall not speak today of the man of wealth, with his perfectly appointed home, fine horses, prize poultry, well kept tennis ground and help to perform all the actual work on the farm; nor to the "cattle king," with his thousands of acres and herds—neither of these—nor of the squalidly poor man, satisfied, if by grubbing early and late he can wrest from the soil a bare subsistence for himself and family, but rather of that great middle class, which, if we would believe it, is the happiest among human kind.

Abraham Lincoln said "God must love the common people, he has made so many of them," and it is the common people, our own kind, the average American farmer, on the average American farm, that I know the best and like the best. No class is so loyal and patriotic; none has given to the nation so many heroes, such wise judges, such inspired poets and orators, such able statesmen and noble presidents, and I am proud today to pay to the average American farmer my tribute of respect.

The farmer and the citizen are essentially of one mind—human nature is the same in both—but liking the farmer as I do, I still have one fault to find with him—he is too prone to look on the dark side of life. "Well," he may say, "maybe all work and no play and mighty poor pay is a cloud with a silver lining, but what good does a silver lining do if you can not see it?" And what do we want of silver linings for our clouds anyway? What we want is silver linings for our pockets." And he stands and gazes on his waving fields of corn or of grain stretching far as the eye can reach and believes that he works harder and fares worse than any other of God's creatures.

But workers in other fields are deprived more than the farmer of the blessed influence of home. Often this other toiler snatches a cold bite for breakfast in a cold, dark house and with another bite in his dinner bucket goes out into the dark to his long day of drudgery; for half the year he returns again in the dark, and six days out of seven he may never see the light in his baby's eyes. The farmer makes long days at his work, but he has the noon hour to roll with the youngsters on the grass; he has rainy days, and the cold months only bring him more leisure for family joys. This association with those he loves best, this opportunity to mould the characters and direct the aims of the children upon whom so much of his future depends, is one of the dearest of the farmer's life. Does he appreciate it and turn it to the best account?

Homes are the bulwarks of the nation in one sense; in another they are its hearts, so vital are they to its life, and it is from farm homes that many of this republic's most able and faithful servants have come. It is upon the country, too, that the city draws for continual relays of fresh life; it is in the unferved calm of the great rural class that in moments of national panic the nation will find its safety. Thus it may be seen that of all the homes in the land, of none is the well-being more truly of moment than the farm home.

An old minister once said to me: "No one ever died from too much appreciation," and I fear we do not appreciate the good things that come our way as we should. I know a family of little folks who, when their mother puts something appetizing upon the table and their plates are helped, exclaim: "Good, mamma, good!" and the smile of appreciation gladdens the mother's heart all day long. If the housework goes crooked and your wife comes to the table looking tired and discouraged, it won't cheer her half so much to preach that she ought to be thankful for a roof over her head and food to eat as it will to tell her what a pleasant home she has made, and that nobody's cooking tastes half as good as hers. This hint will do for wives as well as for husbands, and also for sons and daughters.

Some time ago a "woman with an ideal" drew a pen picture of a "man worthy of a wife," (a good wife she meant). She said she did this because the papers and magazines so constantly furnished rules, requirements and the like concerning the sort of a woman a man should marry. She thought it would be a refreshing change if women were to draw up some set tests by which to measure the men who aspire to matrimony. First, she said, a man should have enough of this world's goods to keep his wife comfortably, and this was not mercenariness, but simply common sense. Her experience was that love in a cottage was not satisfactory—unless the cottage was well built and well kept. Love, she noticed, was palatable, but not filling, except for a very little while.

The next requirement was "sweet temper." She naively remarked that it was not a bit more pleasant for a woman to live with a cranky, grouchy man than for a man to live with a scolding termagant of a woman. She placed purity among her requisites, and generosity, summing up her line by saying that women do not want "namby-pambies" or "goody-goody" men, but they do want men who have faced and downed temptation; men who have conquered themselves and grown strong in the fight.

How unfortunate that nagging and fault-finding find a place in some homes. Sometimes it is the husband who is never satisfied with anything from sunrise to sunset. Sometimes it is the wife and mother who grumbles and finds fault with things whether they are done or left undone. It reminds me of a story I heard once of a drunken man coming home from town at night. He fell to talking to himself and said, "If my wife is up when I get home I'll

lick her; what business has she sitting up and burning out coal when I am away?" Then in a few minutes he said, "If my wife has gone to bed I'll lick her; what right has she to go to bed and let the fire go out when I am away?"

A grumbler is a blot on the face of God's beautiful earth, and the home cannot be the haven of rest that it should be, and the children in the house miss what should be the birthright of every child—happy home environments. If, before marriage, it was love and admiration, why can't it be the same after marriage, with appreciation also? Why can't a man be as agreeable to his wife as he is to other women? Courtesy is becoming to everybody, man or woman. How true it is—

"We grieve our own with word or tone
When we love own the best."

Let us learn a lesson from the telegraph wires: When the wind is right, let us sing; when it isn't, keep still. Life is too short to waste good time grumbling.

"If you e'er know that happy day,
And reach that place—I tell you true—
Where can you have things just your own way,
The world will all be dead but you."

The duties of a woman to herself on the farm is a question upon which there is a diversity of opinion. All true reforms come from within and it is in the heart of the home, among the women, that we must look for the changes that shall make American farm life more attractive.

A man chanced to meet a certain boy who was unduly proud of the fact that he was earning regular wages and supporting himself. He entered into a conversation with the boy, which ran something like this:

"Yes," said the boy, "I make \$3.00 a week; Katie is in a store and she earns \$5.00; I don't know how much father earns; and Ted and Jem, they don't earn anything, they just go to school."

"And do you board at home?" asked the man.

"Oh, yes; we eat breakfast and supper there and mother puts up our dinners for us."

"Yes, I see; who gets the breakfast and does the other cooking?"

"Mother."

"Who washes for you?"

"She does."

"Do you keep a girl?"

"No, we don't need one. Besides, we couldn't afford one, anyhow."

"Does your mother do all the work for the whole family?"

"Why, yes, of course."

"Does she sew and mend for all of you, too?"

"Well, I should say she did. We never hire help for anything."

"You say you get \$3.00 every week and Katie \$5.00; what does your mother get?"

"Mother! why she don't work; she just stays at home; she don't get anything."

This may not be the exact words of the colloquy, but it gives the substance of the conversation. The thought in it which impressed was that though the mother's services were evidently necessary to the family, though she worked, probably as hard as any, the son placed no money value upon her labor. but took it as a matter of course that she should be cook, nurse and no one knows what besides.

"She don't work; she don't get anything; she just stays at home." A situation such as this story pictures causes me to ask, "Whose fault was it that that woman's services were counted as of so little worth?" It seems to

me that much responsibility rests on the woman in a case of this kind. A woman owes it to herself not to make herself cheap. Service is beautiful and it is a crown of glory to the loving woman, but the service should be rendered in such wise that the recipients of it are not rendered selfish; in such wise that the beautiful spirit of gratitude is born in their souls to bloom in their lives and make fragrant the home dwelling. Some of the best meaning wives and mothers do irreparable harm by lack of wisdom in this respect.

Perhaps mothers grow weary of the advice which is offered them so freely, but as long as some women do the things they ought not, all women must expect to hear of it. Many a mother grows old and faded before her time, just because her children are so thoughtless and inconsiderate. It's mostly the mother's fault, usually the mother does not consider herself, and hence the children do not consider her. A wise woman does not wear a sunbonnet and a faded calico, while her daughter displays lawn and lace, ribbons and white kid gloves.

A man has said that women have a passion for self-sacrifice. It certainly is not required of any woman that she should work so hard as to never have a moment for herself. When she works continually beyond her strength she breaks the sixth commandment and commits suicide as surely as if she took a dose of poison. To woman it was not said, "In the sweat of thy brow thou shalt earn thy bread." It is true women on the farm must work, but we will not have to give an account of how many times a week the kitchen floor was scrubbed, or if the sheets and stockings were always ironed, but an account will have to be given for the immortal souls committed to our charge, and it is much more important that the home life is happy enough to make husband and children think home is the best place on earth than that the washing is out before any one's else in the neighborhood, or that every fly or atom of dust is kept out of the house.

I know a young mother with three dear little children, who puts by her supper dishes and reads pleasant stories to the little ones before they get sleepy, and I can assure you that these little boys will remember it long after they are grown men with much pleasant satisfaction.

Some one has advocated "hobbies for women," and a certain man has said "if there is anything worse to meet than a woman with a hobby, it is another woman with a hobby." I am conscious of the fact that some men will not agree with me; they do not like hobbies. Some men do not like soap, either; while others will so tog themselves that they are a grievance to the landscape and a distress to fair weather, and expect us to tolerate it. Nevertheless, I fully believe every woman needs some interest apart from housekeeping to develop her fully and satisfy the demands of an active nature. Have something outside of your regular duties and do not let anything crowd it out of your life. Make your other work so shape itself that this recreation will fit in and after you are thoroughly established you will not go back again into the old rut. It makes life so much sweeter, our work so much lighter, and every day brings us a new joy and gladness. Select your own hobby, your own recreation. No one can do it for you as satisfactorily as you can for yourself.

Perhaps you have a talent for music, or elocution, or writing, or painting, or excelled in some branch of something "when you were a girl." Then cultivate it! If nothing in this line, then in some other. Make a specialty of raising roses or carnations. Take up some fancy breed of poultry; or make a study of natural history. There are so many intensely interesting things that will take us "out of self and away from care." "No time," do you say? Why are all these things of beauty thrown around and about you?

Life is more than meat, and the body more than raiment, and to make life worth living we must keep at our best mentally as well as physically.

Keep school knowledge brightened up so that the children will never say when they come to a hard example or a puzzling question in grammar, "It is no use asking mother, she doesn't know." Far rather have them feel like the little girl who said, "My ma says so, and if she says so it is so, even if it ain't so."

By our thoughts we are fed and refreshed. The welfare of the world looks to the farmer's wife to provide the brains; looks to her to develop them. It is a matter of history that the great intellects that have done the world's thinking and the world's work have been products of the farm. Even old Nebuchadnezzar, when he had lost his wits, recovered them after being turned out to grass seven years. If a return to primitive relations with nature can do that much for weak-minded aristocracy, what may we expect from the normal mind that has laid close to truth, untainted by false standards and artificial values.

Because of these facts—because our farms do furnish brains as well as bread—women on those farms ought to be of the highest order intellectually, and so long as the brains of the farmer's wife stay contentedly under her sunbonnet, the world will jog along, looking to her to recruit the ranks of the thinkers as they are thinned by the vitiating process.

The isolation of farm life that belonged to pioneer times is past. The farmer's wife does not have to wait till the tobacco gives out before a horse can be spared to go to town to do her necessary trading in these days.

The rural districts may now claim the benefit of free mail delivery in many localities. There are at present, in our own State, 34 routes, serving 26,090 people, and the outlook for the universal adoption of the system seems very near at hand. Life on the farm grows brighter and its social aspect improves. With telephones generally distributed and free mail routes reaching all farms, good roads, and a few other trifles, it will not be long before the farmer can have all the conveniences of the city with the delights of the country.

The wonderful advance made in the science of farming during the last few years is one of the best examples of American progressiveness. One evening, a short time ago, a society in Jefferson, Ohio, needed a gallon of cream. The committee called up by telephone the proprietor of a milk farm two miles north of town and asked if they could furnish it. The reply was that they could as soon as the milking was done. In thirty minutes from the time the call was made the cream was delivered. The milk had been drawn from the cows, put into a separator, the cream extracted and sent to town by a man on a bicycle. A few years ago the committee would have had to send a boy in the afternoon, "yesterday's milk" would have had to be skimmed, and if the boy had not treed too many chipmunks on the way he might have got back in time for the festival.

What we need more now is that the home shall grow also in sweetness and purity and love. All can unite in making it so by cultivating nobler qualities of the mind and the heart. The boys and girls of today will soon be men and women, and if this inner home life grows as we advance in other things, an ideal existence will be reached. Let each one of the family strive for the end, then—

"Serve God and be cheerful.
Make brighter the brightness that falls to your lot,
The rare or the daily blessings
Profane not with gloom or with doubt.
Serve God and be cheerful.
The winter rolls round to the beautiful spring,
And o'er the grim grave of the snowdrift
The nest-building robins will sing."

Then we can say also with John Howard Payne—

'Mid pleasure and palaces, though we may roam,
Be it ever so humble, there's no place like home.
A charm from the skies seem to hallow us there
Which seek through the world is ne'er met with elsewhere.
How sweet 'tis to sit 'neath a fond father's smile,
And the cares of a mother to soothe and beguile.
Let others delight 'mid new pleasures to roam;
But give me, oh! give me, the pleasures of home.
An exile from home pleasure dazzles in vain;
Oh, give me my lowly thatched cottage again,
The birds singing sweetly that came at my call
And sweet peace of mind that is dearer than all—
Home, home, sweet, sweet home;
There's no place like home.

THE GIRL ON THE FARM.

By Miss Maud Endicall, Villa Ridge, Ill.

How fortunate for us that the girl on the farm has not been forgotten. Would that I had the wisdom and eloquence to fittingly present this theme. We are justly proud that we are farmer girls, for what title could be more honorable, what station more enviable, and what girls can enjoy more freedom and independence?

Every day we read articles telling about keeping the boy on the farm, but seldom we see anything about the girl on the farm. It seems as if she is somewhat of a side issue as concerns the world at large, but if we would only scan the lines of some of our brightest lights in music, art and literature we would find that many of them were once poor farm girls. They are the talented few, but those that stay and help to brighten the farmer's home are the girls of whom we are to speak.

I hear some of you boys say: "What good is a girl on a farm?" We want to know what a farmer's home is without good, stout, healthy girls with their light, happy hearts, ready to perform the many duties of the household and answer to the wants and needs of father, mother, brothers and other members of the family. Nature has no brighter blessing than the robust health which comes from good open air exercise, of which the girl on the farm has her daily share. Though her cheek be tanned and her hands browned by the rays of the summer sun you will find her heart more true and unselfish than any queen with all her lily whiteness. There are yet some things very remarkable about the life of the country girl. Her graceful conduct, temperate habits and thoughtfulness which, we are positive, are due to her associations, for we believe they are of the better quality.

Does a farmer girl need an education? Why not? Education is essential in any vocation, for nothing is successful without good management, and the quality of judgment generally depends on the education or lack of it. Because a girl lives on a farm is no reason that her mental powers need not be cultivated and her mind broadened and expanded, that she may be able to reason for herself from clear ideas and have good judgment to guide her through her work successfully. Of course every farmer cannot afford to educate his girls in high-schools and colleges, but most of them have good opportunities for attending good common schools and getting a fairly good education at home. Girls should learn the rudiments of practical business by experience on the farm as well as boys. They should learn how to earn, save and spend money. It is a common practice on the farm to give a boy a colt, pig, calf or some kind of stock, to raise as his own. Why should not the girl fare in the same way? Give her something from which she can realize a sum of money that will be her own. No one knows the real value of money until he has earned it, and no one realizes the cost of an article until it is paid for from his own earnings. Every girl should be prepared to earn her own living, for some time she may be thrown upon her own resources. We doubt there being a farmer's girl who has not some time in her life felt a longing for something better than she has known, and she, like Maud Muller, thinks it is found in "the far off town," for life in town seems to the country girl one continual round of gaiety and pleasure. But are these city girls as carefree, and do they have the liberty and freedom of which the country girl can boast? I think not, as a great many of them work under an employer who has bought their time and has a right to every minute of it during working hours. They must also be very careful of appearance, courteous and careful of time. The girl on the farm works at home under the instructions of her dear mother and to whom she proves much help.

Is there any room or time for accomplishments in the life of a farmer girl? Certainly there is. If only the work in the home is rightly managed there will be time for music, reading, fancy work and many other things in which girls are interested. And is she not a light in the social world? Dame Fashion's claims are not so binding and society lines are not so closely drawn. What is more pleasant than a good home, with plenty of room inside and out, to which she can invite her numerous friends as often as she

likes, without the formality a city life would demand? Many are the enjoyable evenings spent in the family circle and by young friends who partake of the interesting amusements usually introduced by the sisters in the family. Nowhere will sociability so quickly present itself as in the farmer's home.

Don't you envy the country girl who has a buggy and horse at her own disposal? She is not at all helpless in this case, for she needs no servant to make things ready. She can harness a horse about as well and as quickly as her brother would do it. Yes, I have even known some of them who are truly farmer girls. They can run a self-binder, mower and other farm machinery quite well, but I do not approve of such heavy work for girls because I think it beyond their physical strength.

I say again the girl on the farm is a most useful ornament, for who else would lift the burden of housework off mother's shoulders? Here she stands with helpful hands ready to do and care for those around her. What speaks more for a girl than to be a model housekeeper? If people could only realize what executive ability it requires to manage a home properly—so many things to do. There's cooking to do, (the most important feature of housework in the menfolks' opinion, for 'tis well-known that to win a man's best esteem is to give him plenty of well cooked food), all the housework, garden to tend, cows to milk, chickens to care for and last, but by no means least, those lovely flowers to beautify the home.

One of the most essential things that a farm girl should learn is the art of making home comfortable. Peace and contentment can only be purchased by the price of her efforts. If we would observe the laws of health more strictly in the preparation of food we eat there would be less sour dispositions and doctor bills, and much more happiness.

We, in this enlightened age and with our privileges, should do better work than did our grandmothers, for we have many more conveniences to aid in making work easier to perform, and life has not so much drudgery. It is quite as much the duty of the daughter as of the mother to care for and see that everything is kept in good order and made ready for any emergency, never forgetting to preserve that cheerful disposition and kindheartedness so characteristic of her class.

There are many possibilities in the life of a girl on the farm, and tho' she may not seem interesting to some, she will be a source of everlasting joy to those who know her well; and I want to add in closing, that no premium goes with the Farmer Girl. She is a fortune in herself.

SANITARY CONDITIONS OF THE HOME.

Mrs. R. E. Swigart, Dixon, Ill.

This subject, "Sanitary Conditions of the Home," I shall take the liberty to apply exclusively to farm homes. Sanitary condition of the home, or in other words, healthful condition of the home. Health is our normal condition, yet how possess it? We dread to be poor financially in our old age, but how many of us give a thought to that physical poverty of health and strength that leaves a man or woman a pauper at fifty? A factor which militates against the health of women of farmhouses is the quiet and seclusion of their lives. It is unhealthy in more than one sense of the word to live too much by ourselves, wrapped up in our own interests and occupations. New thoughts, new scenes, and outdoor air are all vitally essential to healthful conditions of living. We need the change of ideas, such as we receive at these Farmers' institutes, the infusion of outside interests to brighten and freshen our intellects. It doubtless sounds dreadfully unreasonable to some to talk about drainage and ventilation and good dinners, instead of lofty inspirations and sublime thoughts, as a help in attaining a high plane of mental and moral perfection; but health is more necessary to happiness than culture or education. Health depends on right living, and exercise and good food make right living. There is no doubt but that this "harp of a thousand strings," this body so fearfully and wonderfully made, will respond very

quickly in various and many directions, but the keys must be in sweet accord else there will be jangling. Plain, wholesome food in reasonable quantities at regular intervals, other conditions being favorable, will as a rule satisfy the demands of the system, without special regard to brain, nerve or muscle. I believe there are certain rules nearly all may follow, not alone in regard to the food question, but rest, dress, bathing, sleep, etc. And in order that digestion accomplish its full purpose, these must be in a healthful state. I do not mean by health simply freedom from dangerous complaints, but that all functions of the body should be in perfect accord. A great part of unhappiness in the world arises from disordered bodily functions. A bit of undigested food or an inactive liver may cause one to look upon life through dark glasses instead of rosy ones. Henry Ward Beecher, in conversation with a physician, once said that he often had people come to him for religious consolation when their livers were torpid, who would never think of coming at other times. In his inimitable way of relating a story he told of a man who had lately called on him. He was a man who had an enormous appetite which he gratified to the extent of producing great obesity and consequent disease of the liver. Mr. Beecher said: "It was not one of my profession he needed, but one of yours. There are whole herds of beef between that man and Heaven."

Another place where we can help develop this food question is to cast our thoughts and influence towards educating our girls in a more practical and useful way than is being done today. The best part of girlhood is spent in the schoolroom, and mothers complain they have no time for learning housework or anything pertaining to the home. What is the life work of the majority of our women? Is it not that of the homemaker? A gifted clergyman of New York city, in a sermon on "Young Men and Marriage" said, "Good housekeeping has far more to do with domestic happiness than young lovers dream of. No matter what a girl's accomplishments may be, her education is incomplete if she has not some knowledge of bakeology, boilology, roastology, stitchology and mendology." Our public schools should have manual training and domestic science as the first things taught, and then as many other advantages given as they can afford, but insist that the practical must be the foundation stone of every boy's and girl's education. This pure food question is one of vital importance; we must have a more perfect food ration for our tables. Go to your grocer and you get something—you don't know what it is. You ask for honey—you get glucose and sugar and some honeycomb. You buy groceries—sugar, it's mixed; coffee, it's mixed; you buy pepper, and it's mixed. In a city not far from Polo a lady entered a large grocery store, and addressing the senior proprietor, made a complaint against some pepper she had recently purchased there and which she affirmed was half peas. After failing to establish in the lady's mind an imperfect judgment his claims as to the condition of the pepper, the junior member of the firm was called and his partner proceeded to advise him not to purchase anything more of the new house from which this article had been sent, as he himself had been suspicious of not only the pepper being adulterated, but other articles as well. Imagine their disgust when the lady, who had taken only a humorous view of it, told them the pepper was perfectly satisfactory, but in spelling the word pepper she had found half the letters were "ps." When we learn the scientific methods of cooking we will not go at the work with a feeling of uncertainty. When we set a sponge for yeast bread we need not be in a state of anxiety until the process is completed—our bread will be good every time, for scientific principles instead of the unreliable quality of luck will govern the process.

If an interest could but be aroused in our different communities, and during the summer vacations our country school houses be used for a series of ten or twelve lectures on cooking, demonstrated by some competent woman, and farmers' wives and daughters would take the entire course, the result would be inestimable. I earnestly believe the time is not far distant when this will be accomplished.

But there are other ways than in imperfect cooking where the laws of good health are violated, only one of which I wish to mention—that of filling the home with useless bric-a-brac, littering up the house with a mess of trifles

which are never brought into use and where it is impossible for a current of air to work its way through. Where the walls are covered with various articles with a confusion of colors the eye wanders from one point to another in the hope of finding a resting place for the weary brain. I know this is a broad assertion, and it takes a good deal of courage to stand before a large audience like this and plead for more simplicity in household furnishings. Simplicity is always in better taste, and is certainly healthier. My views fully accord with Edward Bok, in the *Ladies' Home Journal*, which I will quote. He says: "Again, we have a prevalent folly of setting aside a room in our houses which we rarely use. If means are at our command we crowd such a room full of puny gilt chairs, upon which no one dares to sit. On the walls we hang impossible paintings, with equally impossible massive gold frames. A gold clock, which never runs, is placed upon a mantle. A 'Chippendale cabinet' is added, which always harmonizes so superbly with a Louis XV chair or sofa, and we have what we call a drawing room. Just whom or what it draws I have never been able to see, unless it draws attention to too much money and no taste. If we are of moderate means, then we make the drawing room as closely resemble one in some wealthy home we know of as possible, only with limited means we must purchase cheaper articles. If we are poor, then we set around as stiffly and unnaturally as we can four or five black haircloth chairs. We put a marble-top table with a plush album on it in the center, a haircloth sofa which no one can possibly stick on, and a Franklin stove that is never lighted. We hang a wreath of wax flowers in a glass case on the walls, adding, perhaps, a coffin plate to add a cheerful tone to the room. A carpet riotous with the most gorgeous roses is put on the floor, and then, after we have pulled down every shade in the room so as to exclude God's pure sunshine and get a nice musty and cemeterial smell in the room, we have what we call in America a parlor; and, in either case, we have a best room, so best that we never use it and people shown into it are always glad to get out of it."

More simplicity in our homes would make our lives simpler. As it is, hundreds of women of all positions of life are today slaves of their homes and what they have crowded into them. They are slaves of their furniture and useless bric-a-brac. Much of the strength for reform lies with the mothers of our land; unto them is good health making its strongest plea. The destinies of millions are in their hands, and they know that what improves and benefits the home will create an increase of happiness and contentment therein.

THE WORRY OF HOUSEKEEPING.

By Mrs. John Golden, Flora, Ill. Read at Clay County Institute.

There is not much modern science in the worry of housekeeping, but an abundance of science must be used to keep from worrying. We all like to see our houses well kept and tidy. We American farm women make slaves of ourselves for our houses and tables.

The farmer's wife is expected to be cook, dairymaid, seamstress, kitchen-gardener, poultry raiser, laundress, housekeeper and nurse—the next thing to jack-of-all-trades, and must be mistress of all.

My meals are simple but well prepared. We have a simple breakfast of what we like best for breakfast—bread, butter, syrup, jelly and fruits. For dinner we eat vegetables (not more than two kinds at one meal), meat, pudding or pie, bread, butter and fruit; for supper, bread and milk. When we were married my husband ate but little of mornings and was bothered a great deal with headache; now he eats a good breakfast and does not complain of headache often.

I taught school for a number of years before I was married and had to eat what was put before me, and I thought I must eat the worth of my money. Therefore indigestion followed with its kindred ailments. These have been greatly relieved by eating the right things at the right time.

I, for one, do not worry about the rainy Mondays, for I do not wash on Monday. I clean up and mend the children's Sunday clothes, sew on all the buttons, which are many, for my children are boys. I don't worry over that, for my estimation is small of a boy that is not enthusiastic enough to jerk off a few buttons. I then put my clothes to soak, prepare something for Tuesday dinner, usually beans, for they will cook while I am washing. Now I am using Magnetic soap, sold by Schudamore Bros. at 5 cents a bar or \$4.50 a box. I use it according to directions and my washdays are easier than my sweeping days are. My clothes are white, too.

I use strips of rag carpet across my floors where we walk the most, thereby saving my good carpets. The children can take the strips out and shake them, which removes a multitude of dirt that any woman would worry about if she saw it on her carpets and floors. Then if some one comes in before I get my work finished of a morning I can roll up those strips, dirt and all, and one of the boys runs to the smoke house or shed with it, leaving my floor pretty clean. If anyone comes shortly after school is out of an evening they find my house looking just like two boys had full sway. In they come, eat everything in the dining room they can; leaving there, get down all the books they think they have no business with; and perhaps finding a ball, begin to toss it to see the dog catch it; accidentally it goes on the bed quickly followed by the dog, then the boys. This makes the house very untidy; nevertheless a house should be a home, and boys will be boys.

Occasionally there is a day when our eatables are short or not easily prepared, no cookies baked nor a pie in the house, and we are busy making a pair of pants that must be finished before the schoolbell rings next morning; just about 11:00 o'clock up drives a vehicle full of company. Then we collapse and exclaim, "What shall we do? There is nothing in the house to eat!" Next we grab up our apron, wipe the dust off the sewing machine, snatch down the comb and smooth our hair, then rush out and say, "Howdy do? I'm so glad you've come." There may be science in that, but we must acknowledge it lacks a little truth, for should we have told it all we would have said, "If I had known you were coming I would have sat up all night and finished my sewing and cooked something good to eat." They came to see us, not to eat, but we lose sight of that and excuse ourselves and just go around the place at the rate of forty miles a minute until half-past twelve or one o'clock, and then invite them out to a good dinner and worry because it is not better. I visit one lady and she visits me; we enjoy each other's visits and are benefitted by them. When I first visited her she opened the door and said, "Just walk right in, Mrs. Golden; you have just such days as this at your house. I don't look very tidy, but I am glad you came." I helped her with the work she was doing and when dinner time came she prepared a simple, neat dinner, and we ate it and enjoyed it. There was not a thing to worry about. I then and there learned a lesson.

The most trying time for the farmer's wife is in the summer mornings. We get up early, breakfast is to get, the cows to milk, churning to do, the chickens to turn out and feed, the baby to wash and dress—all needing to be done first, and only one woman to do it. Yet we get it done and have it to do every morning. Then we have our gardens to tend, our fruit to prepare and can.

The time that demands all our domestic science, patience and speed, is when the threshing machine pulls in. We have but one man at each house out our way; therefore we get no help from them. They don't even know what is on the place to cook, but they know what is left when it leaves. We cook everything we can get, and think if we feed them well they will work well, for we've long ago learned that the way to a man's heart is through his stomach. Just about the time they've eaten everything we have, the machine breaks and they have to stay all night. Next morning we gather up quite a square meal for their breakfast, then clean the house, change the beds, put the towels, tablecloths, sheets and pillowcases to soak and think, "Oh, we can eat bread and butter for our dinners," when in comes a messenger to tell us they will take dinner with us. We forget we are tired,

and by 12 o'clock we have a good dinner and plenty of it—ham, potatoes, cabbage, tomatoes, corn, fruit of many kinds we had put up for the winter's use, bread, butter, tea and coffee. We did not have time to cook the chicken and make the apple pie on which the threshers are so often fed. They pronounce this the best meal we have given them and just about sundown they pull to their next job. They leave one thankful heart behind them. We then have the children's clothes to make so they can start to school, and all the preparations for the winter to make.

We wind up with the year and on New Year's eve we look back on a year's happiness and are thankful we succeeded so well and enjoyed so much. We commence the new year with thankful hearts for we know that to worry about things does not mend matters.

PRESIDENT'S ADDRESS BEFORE THE DOMESTIC SCIENCE CLUB.

(Paper read before Franklin County Farmers' Institute by Mrs. John B. Moore, of Benton, Illinois.)

LADIES AND GENTLEMEN:—We extend a hearty welcome to you to this, our first meeting of the Domestic Science club, organized last year by Mrs. Kedzie; but we have never had a meeting, and as we have had only a short time to prepare our program, I fear it will not be so very entertaining. But we hope to do better next meeting. We thank the managers of the institute for the honor they have shown us by giving us the first day on the program.

Every kind of business has an association to which men of that particular business may go and compare results and experiences with other men of the same business, thereby gaining knowledge from their experiences. The Farmers' Institute is an association for the benefit of farmers, where our husbands, if they are farmers, come to learn the best means of growing their crops, the best manner of feeding and caring for their lambs to make them strong and healthy; and so on with all matters which pertain to their business, and they have found the institute a great help to them. We also expect our club to be a great help to us, and we think our object quite as important as theirs. Our objects are the making of better homes, healthier homes, happier homes, more useful sons and daughters and wives and mothers, who are such in deed as well as name. Sisters, you know we have lambs also to feed and care for, and while our husbands only feed for size and strength, we have to keep in mind the physical growth, the intellectual growth and the moral growth. There are certain foods which contain support for each part of the body. There is brain food, nerve food, and foods that make fat and heat. How can we know that we are giving our children the food that they require unless we study the matter? There are bulletins, for little or nothing, which give the value of all kinds of food to the human body, and there are cooks who can tell how to prepare these foods to make them at the same time palatable and healthy. Lots of good food is ruined in the cooking. Human beings are no easier reared than farm animals, but lots of times there is not as much attention paid to what the children eat as to what the calves and pigs need. These are strong terms, but, nevertheless true, and don't you think it time to start a reform? Human nature is so constituted that if the body is not fed as nature demands it should be it leaves an unsatisfied craving for something, and it has been said, by good authority, to cause whisky drinking and tobacco chewing, and if we, by our neglect, have allowed the worst disease humanity is heir to to befall one of our flock, I fear we have not been as careful of our charges as our husbands have of theirs; our vigilance has been lacking, our fences have not been high enough to keep out the wolves. I feel that we have not a minute to lose, for while that time is being lost, perhaps the very thing that we have dreaded the most may befall one of our family. Eternal vigilance is the price of success, surely, in a mother's case. Knowing all our duties and doing them covers the experience of many kinds of mothers. Surely, upon our charge more depends than we sometimes think. The father often feels called upon to deliver a reprimand when anything wrong has been done, but he does not

often take the offender, before the deed has been committed, and show him just what the result will be if certain little things are done. He is not apt to see the little things. It is the mother who must see that the little things are not done; if that is done the big things will never come. There are too many who think a small sin nothing because "it's just a little thing," but ah, it soon begins to grow when repeated often.

If we expect our children to have refined natures we must cultivate such in our homes, then it grows into them, and they not only act with refinement but they feel it. Their very nature revolts from anything coarse and rough. A spirit of neatness must be cultivated in our homes; particular attention should be given the family dining table to have it present a palatable and pleasing appearance. I have in my mind a family that could only afford an unbleached muslin table cloth. How do you imagine a table would look set with that cloth and other things corresponding? Well, I will tell you, for I saw it set myself, and this is what I saw: A table set with a smooth cloth, bleached as white as snow, with a beautifully hemstitched border all around it, with cheap, but clean, bright dishes, with a bouquet of roses in the center. I only mention this to show you that it does not take money to make your home look attractive and neat. These are small things, but our home life is made up of small details. Our husbands leave all these things to us and it is our duty to see that the home is made as much like home as possible. I do not think so many husbands and children would go away from home if they could have as good a time at home as they can at other places. There is no trouble and expense spared to make the saloons and gambling halls attractive. Our home is our kingdom, you know, and we should prize it very highly.

And now as the ball has started to roll, let us hope that it will not stop until it makes every home better.

EDUCATIONAL DEPARTMENT.

THE TOWNSHIP HIGH SCHOOL AND HIGHER EDUCATION.

By B. C. Moore, Lewistown, Ill.

The purpose of the State in providing free public schools is to perpetuate its existence in an intelligent way. The State, however, is not an end in itself but a means to an end, and finds its realization only in the enterprise, intelligence and culture of its citizens, in the country as well as in the city. The presumption in regard to every free government or state is that it is perpetuating its existence in the most practical way, and that its laws are passed to that end. This presumption is certainly true in regard to the laws passed for the education of the children of a state, for we are likely to act slowly when called upon to pay out money which brings not clearly a present market price; but the present generation must sacrifice that the next may be a grade higher in the scale of accomplished citizenship. In short, the purpose of the State to establishing free schools is to so improve the intelligence and morals of the rising generation, that when they shall become the rulers of the State their rule shall be intelligent, virtuous and just.

It is not easy from this point of view to fix the limit to the grade of education that should be imparted by the State. That it should furnish the rudiments of an education no one will doubt. It seems to me not unreasonable to ask that such education should be provided as can be within the reach of the child of the common citizen. How often do we hear persons deploring the fact that they did not receive an elementary education. In a few brief years the lament will be, that I did not receive the elements of a common high school education, by those stopping now at the eighth grade by choice or necessity. Let it be said with pride that, today, in districts where a high school exists, more than 75 per cent of those that finish the eighth grade enter the high school.

As civilization advances and commercial and social interests become more and more complex, the need of thorough thinking and large knowledge administering the affairs of life become more and more apparent. The man whose education is limited to the mere ability to read and write well has limited views of political and social affairs, and it can certainly be urged that larger views than these are needed in every important juncture of a nation's history. Views that come from a study of history, ancient, mediaeval and modern, of science and of the world's best literature, together with the accuracy of thinking that is helped by the higher mathematics and the preparation comes from the so-called practical studies.

In the early years of the 19th century, the man who could neither read nor write maintained his balance with his neighbor, was not ostracised from society, nor considered inferior to the majority; but how changed are the conditions of today, in the dawn of the 20th century! See the ever increasing complexity of social, industrial and political life in its onward march. Stop it we can not if we would. It is but a natural growth. Prepare for it we must, or be lost in the race. Today the man who can neither read nor write has his very franchise threatened and before two decades of the 20th century shall have passed, he who has but the elements of an education, will stand but little chance in the onward and irresistible rush of thought and action.

The achievements of the 19th century are astonishing in the extreme. To be successful from this time on one must think as well as act. He needs preparation for protection's sake if for no other. The thought of sending our boys and girls into these conditions with but the elements of an education is to treat them with dire injustice and expose them to unequal consideration.

They need to learn something from the high school, which is the common school of the 20th century. The abolition of the high school would be a great calamity. Destroy the nine or ten high schools of Fulton county, publish the fact that in Fulton county only the rudiments of an education can be had and you would not hear, as I heard, of its educational advantages and prestige, before I came within its borders. A reverse current of immigration would set in and the prices of land and property would take an appreciable drop. No one will doubt that good schools within reach affects land and property favorably. Every farmer, in this way, is benefitted by the existence of the high school in his community, but this is perhaps the least of the reasons why the farmer should favor and help support the high school. The educational advantages of a community have much more to do with the prices of adjacent property than is generally supposed. The schools are an index of the general culture and prosperity of a community. A shrewd traveling man said "Show me your school house and I will tell you what kind of a community you live in."

We need the high school not only for its own sake but as a stimulus for the grades. No one will doubt that many more will complete the eighth grade if they have the high school to look forward to than if the eighth grade represented the highest attainment of the seeker after knowledge.

About the year 1865 the people of Princeton township, Bureau county, seeing the worth of a thorough education for their children and seeing the limitations of the district school concluded to establish a township high school. What is a township? The United States government land survey created the township as an educational unit for school purposes, and the district is a creation of the State. The township was the natural high school unit and was so intended. Still, to remove all doubt as to the legality of the matter, they asked the Legislature to authorize it. This they did for Princeton township in 1867. From that time to the present the school has been successfully operated, and has made Princeton an educational center, and an inspiration to every district pupil in that township. The result of the Princeton experiment was to influence the Legislature to pass a general law in 1879 directing the township treasurer, of any township, upon the petition of fifty voters, to call an election for the purpose of voting upon the establishment of a high school for that township, to be managed by a board of township trustees. It is also provided in the law that the voters and trustees of two or more adjoining townships or parts of townships may co-operate in the establishment and maintenance of a high school.

A number of townships have availed themselves of the authority conferred by the law. The general verdict in these communities is that these schools have been a powerful help in educating the children. I have on my desk a catalogue of one of these schools and I notice that last year the number that graduated was five times the number that graduated when the school was established.

The basal idea of the township high school is only a practical application of the principle of universal education. It often happens that the rural district school fails to supply anything more than a very imperfect preparation for life. The boy or girl trained in a district school enters the race for life at a disadvantage compared to the boy who has enjoyed the training of the best town schools. But with the same educational advantages he will, two chances out of three, go ahead of the city boy in the race. The accomplished graduate of a high school is much better fitted to compete for the honors and emoluments of civilized life, than a person whose entire education has been received in the rural district. One-half, and I was about to say the better half, of the boys and girls of this country live on the farms. About 25 per cent of the boys and girls of the city receive

some of the high school instruction, while only 5 per cent of the country receive the same. This is evidently because it has been provided for the one free of charge and prohibited to the other. If there is any one here tonight who thinks no more of the country pupils would enter the high school under free tuition than at present, let him sign a bond to pay the tuition of the number of pupils that would enter a single high school of Fulton county next year in excess of the number that are enrolled now. One township high school says in answer to the question, "What effect has the township high school had upon the country attendance?" It has increased it 30 per cent. Others report almost as favorably. This taken in connection with the fact of increased enrollment from the city or town makes a splendid showing, in favor of the township plan. The township high school is the high school of the masses and the masses are the salvation of this country. The township high school is within the reach of any pupil who will prepare for it. If we concede, as I think we must, that the spirit of the age demands a broader preparation for life than is furnished in the district school the cheapest way to secure it for the majority is through the township high school. Many or all of the pupils may attend and board at home and save the expense of attending at some distant institution. The expense is so largely distributed that individuals feel it very little. From information gathered from township high schools the cost of maintaining the school averages about one per cent or less, for which, in a township whose only taxable property is the farm, a moderately good school can be maintained with not more than a three-year-course, but in more favored townships where there are large aggregations of wealth two or three more years can be afforded so that the pupil may select three or four years that will prepare him for the particular business that he wishes to enter, or if he chooses may take an extra year at home and cut a college course short one year. Every boy or girl will either go to college or not go, for either class we should do as much as possible. In small township high schools a year or two of the science of agriculture should be offered instead of the technical sciences. In larger schools both the agricultural and technical sciences should be offered that the pupil may take his choice. I was heartily glad when agriculture nature study was introduced into the State course last year and will rejoice still more when the farmer boy is recognized by the introduction of agricultural science into the high school. Let me say, however, it will never be introduced into a school in which the farmer has no controlling voice. "Agriculture is the oldest of the arts and the newest of the sciences." "Perfect agriculture is the true foundation of trade and industry—it is the foundation of the riches of the State," but unless it is educated agriculture the other fellow will soon have the riches, the lion's share of the profits. There are excellent texts recently prepared and now in preparation for this work, such as James' Practical Agriculture, and Bailey's Elements of Agriculture.

The elements of domestic science is entitled to consideration in the plan of practical education. Thanks be due to the energy of the Domestic Science association. Watch them and see what they accomplish in the next ten years. Some practical person has discovered that the best way to reach the heart of a man is through his stomach. When the stomach is in good order the heart and mind fares much better. I believe in scientific and economic cooking. I look forward to the time when we shall have a series of texts for use in the public schools on the domestic arts and sciences.

The fact that the city or one district out of the eight or nine in a township has provided the high school instruction is no reason why the others should not unite and seek to establish one or obtain a vote in the management of one. Let us not flatter ourselves that the cities are anxious to give us a voice. The larger cities consider the farmer backward in these things and so do not wish him represented on the board of education. They can plan their own high school to suit themselves and let the country boy take what he can get and say not a word. I consider the farmer of today a conservative, but entirely safe, and very helpful element in the management of public education. Most of the districts are paying a higher rate per capita for the eight years than the cities are paying for twelve years. Something must be

offered for the culture and education of the millions of country boys and girls for whom there is no provision in the plan of popular education except the township high school. It seems to be that or nothing. A certain school-superintendent of Massachusetts has figured from the reading of biographies that a person's chance of honorable mention and eminent success in the world is increased 50 per cent by being the graduate of a high school or college. Isn't the boy or girl of the farmer just as good as the boy or girl of the shoemaker, merchant or lawyer? The fact that a high school already exists in the township, and especially if it be centrally located, should be a thing for which the farmer should feel glad, providing he believes in high schools, for then he can receive better returns for his money than in sparsely settled townships in the reduced cost of instruction per capita and in the more desirable, extensive and elective courses that can be offered. It is not true that the majority of pupils in the town stop at the eighth grade, nor is it true of country boys and girls in places where the free township high school has been given a chance. If it be true that a larger per cent of the country pupils stop at the eighth grade or before than their city cousins, and it is true, it certainly is not a condition with which the farmer should be content, but should spur him into action, for one thing is certain that the city is not going to stop and wait for the farmer to catch up. A farmer who is valued by the assessor at \$5,000, can take the runt out of a bunch of pigs, and tell the boy or hired man to fatten it to pay the township high school. The fact that taxes are already high is no reason for not paying out money for things that are yet needed. If a boy attend school every day of an eight and one-half months term, he attends but half the days of the year and has mornings, evenings, Saturdays and the busiest season of the year at home. If I were a farmer and had a boy that I thought worth raising I would rather give him a diploma from a good high school to go through life with than to give him 40 acres of Fulton county's best land and have him agree to never go to anything higher than the district school. If you do not agree with me in this, let it go, just call it a difference of opinion, give your boy the 40 and I will give mine the diploma and no harm is done. The race will go on. 'Most any boy can work all but 120 days of the year and in this time will do as much as the average city boy in 180 days. He must wear clothes, and if too poor his books will be furnished by State law. He can attend. I had a boy attend my school who came, morning and night, nearly the diagonal distance across a township, and another who walked almost as far.

Now I believe as large a per cent of the country boys and girls would enter the high school as of the town boys and girls, under free high school for all, and in this I am supported by the working of the plan. There are some who for educational advantages, and other good reasons, leave a large farm, move to town, buy or rent one house and lot, pay a little high school tax on this if purchased, and educate a family of children, while the farm is exempt from high school tax. They are an excellent class of citizens and are usually ready to help the plan of popular education, for they are wise and see the advantages of it. We need their counsel as well as their tax. Counting such country property as rightly belonging where the children get their education, figure it up for yourself and you will find that the rate between the high school district population and country population is about the same as the ratio between the property valuation of the same. The difference will not be worth quibbling about. There are not many who live in the country and own much property in town. The most of the widows, orphans and the very poor live in town and it would seem that here, if anywhere, the children would be compelled to stop to make a living. How many would enroll in the high schools of the State next year if a tuition of \$2.50 or \$3.00 per month were charged? You may investigate for yourself. It sometimes happens that the town high school becomes crowded and country pupils are not allowed to go at all. It is true today in a number of the high schools of the State.

The country boys and girls are the very persons we most need to educate, for they are the most likely to be deprived of it. A very careful examination of the biographies of the most eminent men of this county, of England and of France, shows that the most of them are country born. Give the boy a chance

to enter any sphere of activity for which he is adapted. The high school education is the open door to success, whether it be in farm, mercantile or professional pursuits. The only place where there is plenty of room is at the top; there will always be room there and to spare and nowhere else, and the nearer the top one gets the less crowded he is. The boys and girls on the farm will some day give character to this nation.

I know a farmer in McLean county whose son graduated at the State University in Agriculture, and when the son had been home awhile the father turned the farm over to him, because, as he said, he could make an acre produce more. The boy needs the high school whether he goes away or stays on the farm. The farmer's boy is inured to the habit of industry and, if need be, hard work, for which he should be thankful, and when he carries this habit into his new field of thought and action he becomes a man of might. 'Tis also true of the girls. Give them an education and they will find the rest of the way alone if need be. To neglect the education of the country boys and girls is to invite a national danger. The country will need their services in some critical time to come, when we are lying silent in the tomb. Let us not say the district was good enough for me and it is good enough for the boys and girls of today. Saying it will not make it so. Fifty years ago only the sons and daughters of the cultured found the way to college. Today the sons and daughters of the common people are finding the way. An eastern professor, who had more gray matter than common sense, regrets this fact and says the "mob has captured the college." Let us give our boys and girls as large a culture as we possibly can afford and to this end encourage the township high school and make it as effective as possible. It is the high school of the whole people. If the mob means the common people, thank God that the "mob has captured the college."

THE ADVANTAGES OUR COUNTRY BOYS AND GIRLS HAVE TO DEVELOP A HIGH STANDARD OF MANHOOD AND WOMANHOOD, MENTALLY, MORALLY AND PHYSICALLY.

[By Mrs. Martha A. Peet, Mason City, Ill.]

What constitutes a high standard of manhood and womanhood, mentally, morally and physically? Does it require a classical education or a thorough knowledge of the languages and a membership and attendance of the many religious societies and a Sampson in strength? Most assuredly not. Does it require knowledge? Again I answer, yes. The greatest amount of knowledge that will be of practical use in the upbuilding of a strong, healthy, intelligent man or woman that will be of the most use to their fellow man in the community of which they live. In the beginning God created the heavens and the earth; Heaven for spiritual man and earth for mortal man. Upon this earth (or in the country, as the city was a production of man) was placed everything that was necessary for the upbuilding of man. There is hardly a boy or girl of the average farmer that does not have an opportunity to gain a thorough knowledge of the different things that, thrown together, make up the school of life. While many boys and girls think it the same humdrum routine of life from one year's end to another, there is hardly any occupation that affords more changes for both mental and physical culture than country life. Today they are perhaps working with the horse, which gives them a chance to learn their nature, their diseases, their uses and their value to mankind. Tomorrow may find them all day employed with cattle. They may learn the best breeds for beef, what kind of a cow is best for dairy purposes and what kind is most profitable to keep in the many different localities. The following day may find them working with the grain, sowing or harvesting, in which there is a chance to learn so much about the time of planting, the different kind of soil that is best adapted to each and every one of the many different kinds of grains and grasses, which will be the greatest financial success, and which will best keep the ground in good growing condition. The girl on the farm has an opportunity to learn almost as much about the farm as the boy. While she does not spend as much time in the field and among the stock as a boy, she hears the pros and cons

talked of day after day and she may learn and practice the cultivation of fruits and vegetables and the growing of poultry, which may add a great deal to her store of knowledge, and health and strength to her body. The different kinds and changes of labor and the fresh meats, fruits, milk and vegetables are all any boy or girl needs to build up a good strong body. The young people of the country are much more of their time alone than people of other occupations, which gives them an opportunity to cultivate their own thoughts. Scholastic men and women speak of book education; there is also a life education—that great arena where we must battle with the forces around us. Set a high price on every spare moment; knowledge acquired by labor becomes a possession, a property entirely our own. Facts acquired in this way become registered in a manner that mere imparted knowledge never reaches. A habit of observation and reflection is wellnigh everything, proving one neglects not the heart culture. In order to possess a cool, level-headed mind the moral nature must be cultivated in accordance with the mental and physical qualities. Without heart culture we can not have a well balanced mind. The lessons of nature are as many and varied as the dews on the grass. Much of our happiness here and hereafter depends on the moral knowledge gained by observing God's creations. Character is the solid food of life, and that which gives a man value in his own eyes. No boy or girl can ever attain anything great without a good estimate of himself. God gives the mind and man makes the character. All that anyone can hope to be is built up particle by particle, thought by thought and fact by fact. So many boys and girls ask the question, "Will all these little, homely, commonplace things be of use to me in after life?" Where I once lived in southwestern Iowa we had a country lawyer, a very homely, uncouth looking man, but considered among the best talent in the state. He was employed on a timber case down in Missouri, where thousands of dollars were at stake. Missouri had her best talent arrayed on the other side in the shape of a thorough student of law and a good pleader. When our country lawyer went into the court room Missouri's talent looked at him, sized him up and failed to even speak. After the trial was over and the country lawyer had gained the case, the other lawyer came up, reached out his hand and said, "Where are you from?" The country lawyer, thinking now is my opportunity, said, "O, from a logging camp up north." Yes, he was from a logging camp, but it was many years before, when only a boy, and he told us when he came back that it was only the thorough knowledge he gained of timber while working in that camp that enabled him to gain the case. Perhaps little did he think when lifting and tugging until he could see stars, what a solid foundation he was laying for a greater life; and when I say greater, is it true? Can any occupation or profession be greater than one instituted and blessed by our Creator? I do not wish you to understand I underestimate the knowledge of books. Get all the good books you can. Learn all that is possible from them; store it away in your brain room beside your experimental knowledge where it is ready for use at all times, and you will surely be of great value to your friends and associates and an honor to the God who made you. I do not wish to cast a shadow on the advantages of the city bred lad or lass, for their advantages are many and great. I only hope, after we have passed through the long sleep, we may arise with our bodies so renewed, our mind visions so brightened, our souls so quickened, that we may be on an equality despite any opportunities we may have had while on earth.

FARM DEPARTMENT.

THE SUGAR BEET INDUSTRY AND ITS PLACE IN ILLINOIS AGRICULTURE.

[By Fred H. Rankin, Athens, Ill., at Morgan County Farmers' Institute.]

A widespread and general interest has been manifested in sugar beet growing during the past season. There are many good and essential reasons why the sugar beet industry should become an established feature in Illinois agriculture. Sugar beet culture would bring more thoroughness, more careful methods, more intelligent and a more rational and balanced system of farming.

Every well cultivated field of sugar beets stands as an object lesson in good farming and is an emphatic protest against superficial and slovenly methods. Sugar beet growing necessitates the intensive system of agriculture and this system applied to Illinois means better crops, better live stock, better farm products, better homes, a better farm life in every way and a better suit and a fatter pocketbook for the man who intelligently introduces this industry in his farming operations. The introduction of beet culture would be of incalculable value to the live stock industry, independent of its other advantages. The beet pulp and roots fed directly to cattle, sheep or swine would result in higher excellence and greater economy of production and beet pulp when dried and combined with the by-products of cereal mills and glucose factories makes nearly a balanced ration for beef and dairy cattle.

In considering and forecasting the future of any new industrial enterprise it is well to weigh the whole question in all of its details, for the writer believes that persons who attempt to influence the suspended public opinion should take a conservative position in this matter, one that will be justified by future events.

That the sugar beet industry will be an increasingly prominent factor in American agriculture I verily believe, as we have faith in the ability of the American farmer to take up a new enterprise successfully, and American inventive genius may be relied upon to provide implements necessary to cheapen the culture of the crop, for this sugar beet business from first to last needs that combination of qualities of thinking ahead, energy and short cut ways practiced by our leading agriculturists in using up-to-date machinery and methods; in short, the industry needs to be Americanized. I believe the industry in this State will be a success in time—conduct it in any way you will, but if the promoters of the industry are men of capital, grit and enterprise there need not be any half way funerals issue from any factory which may be rightly located in the State. I believe that the time is fully ripe for success here in central Illinois in sugar beet raising. The business has gotten that in it which ought to make every one conducting its management do his level best and, as David Harum puts it, "Do it fust."

There is an unusual inspiration in being associated with an enterprise that means so much to the finances of Illinois, both agricultural and commercial, and have a part in ending this suspended public opinion about it being possible to successfully produce large crops of sugar beets on our rich corn land.

The sugar beet crop is to be regarded as an additional one to which the farmer, properly located, may give a portion of his time. It is not to be recommended to take the place of other crops which one knows can be suc-

cessfully grown. In commencing, the writer believes that farmers will be wise to limit their crop to a small area of from one to five acres and increase it only as they see their way clear to do so. So far as soil and climate are concerned, it seems to be settled that Illinois is well adapted to the growing of sugar beets, therefore it seems opportune that farmers should put forth the necessary effort to become skillful in the production of beets, for the sugar beet is an exacting crop and persons unfamiliar with the best methods of growing it are liable to find that they have much to learn, but when properly managed it is perhaps the most profitable crop a farmer can raise.

The educational value to be derived from growing sugar beets properly is a factor in the benefits of the industry that is important for the young man to consider. The exacting demands of its successful culture require the best kind of farming, and I believe that a farmer who grows sugar beets well will be likely to grow his other crops better than he did before raising beets. The careless, slipshod farmer, who has made a failure in other lines of crop production, should not be encouraged to take up this industry unless he is ready to radically reform, for it requires intelligence, industry and capacity to master the details of methods of new farming, as farmers who cultivate this crop successfully must be those who are willing to adhere faithfully to definite, careful methods, but in these qualifications I believe the up-to-date Illinois farmer is not excelled by the farmers of any civilized country. Again, I believe it to be an undoubted gain if we add another cash crop to our rotation; one which finds a sale at an assured price; as every new, successful crop also tends to prevent overproduction along other lines. It is a fact noted by the best posted observers that the farmers in successful beet growing districts are thrifty and getting on in the world beyond those in all other districts except where live stock farming is carried on.

Allow me to give a few figures relative to the consumption of sugar in Illinois, based on the census of 1900: Accepting the estimate of 70 pounds of sugar consumed per individual per annum and a population of 4,821,000 people, the sugar requirements of our State call for 337,470,000 pounds; at 5½ cents per pound we have an aggregate cost of \$18,560,850, or \$50,000 a day, which may be stated as the sum that Illinois is sending each year to Europe and the tropics to pay for the sugar she uses.

Is it not time that we as a people were exercising the intelligence and foresight needful to save at least a portion of this sum to our commonwealth and thus prove a marked stimulus to our agriculture in that a portion of this \$50,000 a day expenditure would be kept at home as well as bring more consumers into the State for the other products of the farm, as well as taking some of our acres now producing crops in plethora out of competition and giving them over to a new industry?

The sugar consumed in this and in other countries up to 1850 was nearly all derived from sugar cane, but at the present time two-thirds of the sugar crop is from the sugar beet. Between 1865 and 1885 Germany, the leading sugar beet country, increased its output 338 per cent. This growth has been fostered by strange vicissitudes in the fortunes of nations, as the commercial embargo and sugar bounties of the Napoleonic wars and by the emancipation of slaves in the British colonies, giving as it did a temporary check to the growth of sugar cane, but the real creators of this new industry were men of scientific training who solved certain botanical and chemical problems. About 100 years ago Marggraf and Achard discovered and established the fact that beets contained crystallizable sugar identical with that of sugar cane. Science now came to the rescue and a beet was gradually developed having a larger percentage of sugar and a smaller percentage of the undesirable impurities. Sixty years ago 18 tons of beet root was necessary to produce one ton of sugar; this quantity has been reduced by selection and careful breeding so that eight to nine tons of beet roots produce one ton of sugar. From 4 to 5 per cent of sugar, as found by Marggraf in 1796, the sugar beet of good quality now contains 15 per cent and more, 12 per cent being considered necessary for a profitable manufacture.

In conclusion, the conditions justify the belief that the sugar beet crop has come to rank among those which will be regarded as an important and profitable

ble factor in the industries of the State, which, while it may not be an uninterrupted success, yet the ultimate success of which will be assured by its growth through education and experience.

It is an industry in which the interest of the factory and farmer are reciprocal. The farmer will not raise beets unless there is a factory to take them and on the other hand no factory can long prosper without the coöperation of the farmer, for no sugar beet factory is stronger than its agricultural support and end, consequently the manufacturer must guard the interests of the farmer and the farmer must be able to have confidence in the manufacturer and both must have a patient and resolute faith in the final triumph of intelligent means and reliable, conservative methods of management.

FROM FIELD TO MARKET.

[By J. J. Wilson, Villa Ridge, Illinois.]

GENTLEMEN.—Upon the subject assigned to me there is little more to be said than to deliver your product to the transportation company and trust in Providence.

As I understand it I am not expected to discuss the methods employed in the growing and preparation for sale of the various commodities sent from the farm to consumers in distant and widely separated localities, but am to relate and set forth such facts as my experience in the management of our association's business has placed me in possession of.

Anything that is to be gained by one method over another may, in my judgment, be summed up in one word, and that is, coöperation. By associating themselves together shippers of fruits and vegetables can and do obtain advantages in numerous ways over the individual acting independently and without organization. But in order to obtain the full measure of benefit of organized effort the commodity, whatever it may be, must be in sufficient quantity to go forward in carload lots. When produce is delivered at the shipping point in such amounts, and behind it is a well organized association of growers, they at once become a factor in the business world, and take their place among the commercial institutions of the country to which they are entitled, and are regarded and rated accordingly.

Such an organization will at all times command the attention of transportation companies and will more readily secure the adjustment of grievances or the granting of favors than is likely to be the case of the average farmer acting singly and alone.

The manner and care with which the more perishable and fragile of our products are handled may be greatly and favorably modified by a knowledge on the part of trainmen and others that there is an interest involved in the goods that is in ready and friendly touch with the management whose servants they are.

But what is better and of more advantage to the grower than trusting to the careless and disinterested employé is the fact that by organization we are enabled to do the handling of our own goods in as careful and painstaking a manner as we may choose to adopt, and be compensated by a reduction in charges that fully cover the added expenditure.

Those are some of the gains that accrue from coöperation. If time and circumstances permitted I could mention others and go more into detail upon the points I have referred to, but at present I will not tax your time and patience further.

THE COW PEA.

[By L. F. King, Huntsville, Ill.]

This is an age when the wide-awake farmer will not stay in the ruts. If the methods used and the crops grown by his father do not bring satisfactory results today he tries something new. He will hunt the world over for some new fruit, a new variety of grass or cereal that he hopes will be more productive under his conditions than those he now grows.

Among those plants the merits of which have been loudly proclaimed of late the cow pea seems to stand foremost. It is not new, for it has been raised in the gardens of the south for 100 years. It is closely related to clover and alfalfa, and under certain conditions for certain purposes it will likely prove superior to either. To let you know something of the possibilities of the cow pea I will relate my experience the past summer. I procured one bushel of seed of the Whipporwill variety last spring. This I drilled with a wheat drill the 22d of May upon one acre of as thin soil as I had. The ground had been thoroughly pulverized and packed to retain moisture. In about three days the peas were up and grew rapidly. They withstood the drouth remarkably well, and by Aug. 10th some seed had commenced to ripen. The growth of vine, which was not heavy yet, would perhaps have made one ton per acre. After the late rains began to fall the latter half of August and September there was a very luxuriant growth. I found the branches thrown out by one vine to be 12 feet in length, and in some places over the patch the vines were three feet deep. I allowed as much seed to ripen as would and so did not mow them off till October. They seeded rather lightly, but will have four bushels or more when shelled. In order to get the maximum amount of seed I think they should be planted in rows far enough apart to be cultivated lightly about twice. A few hills of Warren's Extra Early that I planted in the garden and hoed some, seeded heavily.

□ The cutting was delayed too long to make the best hay as the vines had shed half or more of their leaves. The yield was a ton and a half, that was greatly relished by both horses and cattle, and the pigs and chickens nosed and scratched the litter over for every stray seed. The cow pea for hay, with its rank, sappy vine, will be found difficult to cure and handle. It may be used as a soiling crop, or for hog, sheep and calf pasture to great advantage.

As a soil renovator it is claimed to rank ahead of clover. I find the tubercles on the roots to attain the size of peas and hazel nuts. The peas should not be planted till the ground has become thoroughly warm, or about the first of June. As clover often fails to catch, the peas may be relied upon as a perfect substitute; and as a highly nitrogenous feed it will enable the farmer to economize on his carbonaceous feedstuffs which he usually has in excess.

I think the cow pea a forage plant of great promise, and predict for it an early place in the rotations of our farms. Many farms today are greatly impoverished, with their condition growing worse year by year, yet these may be brought back to the virgin state. No farm gets run down except through the ignorance, stupidity or wilful neglect of the owner or tenant. With failure added to failure, in contrast with the growing success of those who have the courage to follow the lead of science, they will eventually, and I hope before being vanquished, become convinced of what their real trouble is. When that conviction arrives, and it is arriving, too, here and there, a farmer will be humble enough to take the hand of the teacher, be it nature or a professor of agriculture, and be taught that while he has been prodigal of her resources, nature is as forgetful and merciful as the God of nature, and has ample ways and means whereby he may restore the injury wrought against her.

Whenever the American farmer becomes wise enough to embrace and follow the teachings of agricultural science, then will he become free and independent in fact as well as he is now in name.

THE SCIENCE OF CORN BREEDING.

[By DeWitt C. Wing, University of Illinois, Urbana, Ill.]

With the admirable advancement of agricultural education made possible by the presence of agricultural colleges throughout the country and with the great transformation of methods which have been going forward for the past century have come clearer ideas, more enlightened conceptions and better comprehensions of the fundamental principles underlying the science of agriculture. In every department of rural occupation there has been vast improvement noted in the past decade, and it must afford all good farmers no little pleasure to contemplate the glorious future which present movements so vividly portray. In every agricultural innovation there may be seen a potent factor making for still larger progress. There is nowadays a more substantial degree of harmony existing between the business and the agricultural worlds. Farmers are learning what must soon become an universal knowledge, that they are a part, an important part, of this great business country. While there never has been actual stagnation in agriculture there have been periods of depression occasioned largely by lack of knowledge on the part of farmers. Other kinds of business have experienced such adversities for practically the same reason. But the higher education of the people, and this, in a tremendous proportion, includes all those whose livelihood comes from the soil, has given to all kinds of American life quite new and brighter aspects. In this regard the American farmer has, in recent years, been generously dealt with. His business is firmly based upon a solid area of science; it is deeply rooted in the very vitals of the nation; it is the corner-stone of civilization. There has come with all these changes a rapidly growing interest in special farm crops. Today we have all kinds of specialists, each in position to render a fine service in his particular line. We have the fine cattle specialists or the breeders of highly bred cattle, and with reference to sheep and swine and poultry we know there are breeders or husbandmen who are specialists, thorough masters of their business. The live stock men have been quicker to realize the necessity of improving their animals in order to make the breeding business a success than the cereal growers have been in coming to the conclusion that, in order to make grain growing lucrative, different methods from those prevailing must be adopted.

But the light has dawned and the truth gradually is extending to the uttermost parts of the country. It is now known that there is a way to improve one of the great cereals—corn—by the intelligent selection of seed and the correct methods of cultivation. There has developed a deep and progressing interest in the pedigree of corn just as, fifty years ago, intense interest attached to the pedigrees of breeding animals. The matter of a pedigree for corn has become important because no material progress can be made in improving corn without having in mind the kind of corn which it is desired to secure. And this imaginative ideal will be the result of a knowledge of what the seed corn was, for what it was its product is likely to be, if the old law prevails, that everything bringeth forth fruit after its own kind. Having no definite knowledge concerning the history or pedigree of a variety of corn the farmer plants it in the hope that it will give him a satisfactory result, but he can rely on nothing definite. This is not so with the breeder of thoroughbred stock; he knows that the progeny will faithfully represent the breed; that the ancestral characteristics will be present in its new fibre; that it will be true in every way to the particular type of which it is an offspring. This degree of certainty can not exist in the absence of knowledge regarding the history or pedigree of the animals used for breeding. It is just as true that in the absence of correct information respecting the history of a variety of corn which it is desired to improve the farmer is at sea; he doesn't know what his crop will be, for he does not know what were the chief characteristics of the variety's ancestors. Thus it readily will be seen that much importance attaches to the history of a variety of corn. In fact, it generally is regarded as among the most potent factors with which to deal in the improvement of this cereal. Seed corn, behind which there is a long line of special characteristics, peculiar to the type, and which has been bred carefully for

years, is in the nature of things a reliable seed stock. The farmer knows its history, what it will do under proper conditions, and hence he plants with a reasonable assurance that the result will be gratifying.

The Illinois Agricultural Experiment station, through its faithful staff of professors and assistants, has accomplished a most valuable work in collating historical, statistical and other interesting data anent the leading varieties of white and yellow corn as grown in the Mississippi Valley. The chief characteristics of all the well-known varieties have been secured and published by the station, and to these descriptions of the different varieties, furnished by the most prominent growers throughout the country, has been added highly valuable information in relation to the vitality of the corn. Professor Hopkins and his assistants have chemically analyzed the corn tested on the experiment farm and thus ascertained the percentages of oil, protein and starch entering into the composition of the kernels. Aside from the work that has been done in Illinois looking to the improvement of corn from a chemical standpoint, the matter of selecting for seed uniformly perfect samples demands special mention. Mr. A. D. Shamel, instructor in farm crops at the University of Illinois, has made a systematic study of the distinguishing characteristics of corn and by the practice of the methods which he recommends any farmer may soon breed up a good quality of corn, which will enable him to secure a larger return for his labor and time. But the whole question hinges, in large measure, upon the pedigree of the seed used. If a corn have pedigree, if it has been carefully bred for a lengthy period, it will produce a uniform quality of corn each year; it will produce a type possessing those characteristics fixed in it by heredity. Uniformity in seed is especially desirable and it is only through it that a uniform quality can be secured. The practical application of this phase of corn culture may be presented so as to be at once suggestive to the average farmer, indicating clearly what course he should pursue in order to obtain the results predicted.

Lacking the inclination or time to improve a variety of corn already familiar to himself, the farmer should, like the stockman who wants a superior sire for his herd's improvement, purchase pure-bred seed that has a pedigree, a history which supports the claims made for it. He should purchase his seed from reliable seed corn growers, of whom there are several in this State, and demand with the purchase a clear description of the corn, its history or pedigree. An organization denominated the Illinois Seed Growers' association is in position to give the farmers of Illinois a wealth of information about corn, and it is to their interests to acquaint themselves with the association and its objects. It makes the pedigree business a specialty.

So much for the pedigree of corn. The discussion now leads us to the consideration of another feature intimately associated with and bearing an important relation to this phase of the question. Reference is made to the vitality of the grain. Upon this depends the entire crop. Without vitality or life in the seed germination, if it occurs at all, is likely to be very weak, and the resultant plants will, of course, be handicapped by the same deficiency. Vitality, of course, varies with the different varieties and with different climates; it also varies with different soils. It may be safely argued that corn of poor breeding, or corn of no breeding would be a better way to put it, will give unsatisfactory results because of its weak vitality. Weak vitality logically follows where any one variety of corn is grown consecutively on the same ground, and without regard to the prior conditions of seed selection. Careless or random breeding in live stock lessens the vitality of the animals. Insufficient vitality in seed corn manifests itself in the small percentage of germination, but more clearly in the quality and quantity of the yield. A stalk having no ear may be said to have come from a seed weak in vitality, though of course there are other considerations in the case. Weak vitality, in most cases, is a hereditary quality. The planting of seed weak in germinating power inaugurates that system which many corn growers so long have ignorantly followed—a system which perpetuates the same weakness, or transmits it to future crops. The disposition of practically all cultivated plants is to revert to the wild state, to degenerate, to lose those characteristics which man has developed in them. This fact is illustrated forcibly when we consider that, in corn, the undesirable rather than

the desirable characteristics are reproduced in crops which are permitted to grow as nature would dictate. This is a hereditary tendency. We must overcome it if we are to continue the improvement of our farm crops. The way to overcome it lies in the judicious selection of seed—seed having vigorous vitality.

And how may we ascertain the vitality of seed corn? Simply by testing it. A simpler method and at the same time a more completely satisfactory one could not be devised. At the Illinois experiment station the testing of seed corn for vitality consists in planting two kernels, picked from the central portion of the ear that has been selected for planting. Two kernels from each ear will be ample to indicate what degree of vitality persists in the entire ear. The kernels are planted in ordinary dinner plates containing an inch of sand. Any kind of loose soil will answer the purpose, though sand is preferable. The sand is placed in the plate and thoroughly moistened, when the seeds for testing are pressed down into the mushy substance until they nearly touch the bottom of the plate; over the plate place another but smaller plate, leaving an opening at some point for the accession of air, without which germination can not take place. The germinator thus devised is now placed where the temperature ranges in the neighborhood of 80 degrees F. If it goes considerably below this point the results are not likely to prove reliable. The proper temperature may be maintained in any ordinary bed room if care and attention be given to the matter.

In four or five days some, perhaps all, of the seeds will have germinated. A thorough test should last for a fortnight. If at the end of that time all the kernels are not "up" we may assume that those having failed are decayed. If, for example, we planted 100 kernels and 80 of them germinated our conclusions are that 20 per cent of the seed lacks germinating power. And this means much more than it may at first appear to mean to the corn grower. If, under the favorable conditions with which we have surrounded the seed under test, only 80 per cent germinates is it not feasible to conclude that under such conditions as would prevail in the ordinary fields prepared for the crop there would be a still smaller percentage? This conclusion is unavoidable.

The best authorities on the subject of corn culture tell us that seed which gives a test of less than 95 per cent vitality is not safe for us to use. As a matter of fact if, with seed testing 90 per cent, we could secure a 90 per cent stand it would be safe to use such seed. But, as already has been pointed out, if the test gives 80 per cent the practical field results may not give nearly so high a percentage. The testing simply affords an index as to the vitality of the seed. It furnishes us evidence of vigor or of weakness in the life of the seed. And this is all that is necessary.

Having a high percentage of vitality in the seed we use, the degree of uniformity and of perfection in the stand will be far less problematical. It well has been said that, "a good stand is half the crop." This being true we at once appreciate the necessity of planting seed strong in germinating power. But granting that with inferior seed we secure a fair stand, the fact remains that we shall reap an inferior crop, both as regards quality and quantity. With weak seeds we may secure forage at the expense of grain. When we plant corn we want a crop of corn—the grain—knowing that under any circumstances the fodder will be abundant. Enough has been said to impress upon any receptive mind the significance of using seed having strong vigor or vitality.

At this juncture attention is due the matter of seed selection. Intelligent selection of seed depends, of course, upon the standard by which the seed is judged. In the absence of definite rules regarding the question the farmer proceeds upon his own preconceived ideas as to what constitutes perfect samples or ears. It is needless to say that under such circumstances serious error is almost sure of commission. The average farmer's conception of what constitutes a perfect ear of corn needs revision. In most cases it is argued that the largest and heaviest ears are the best. That this is untrue may easily be demonstrated. In the case of very large ears it is very probable that the stock bore but one of them, whereas in the case of the smaller ears a single stock may produce two of them which will shell more corn than the one very large ear.

But uniformity in size of ears and of the kernels upon the ears is that most desirable point which modern corn growers so earnestly seek. And uniformity may be secured only through the selection for seed of corn having uniformity. Out of the chaos which so long has existed in reference to this subject has come that most valuable and praiseworthy document called the score card, by the means of which any intelligent farmer can select seed corn with all the chances of securing the best in his field. The score card as used in Illinois was adopted several years ago by the Illinois Corn Growers' association, and it is impossible to estimate the value it has been to those who have used it in the selection of seed corn. The ten points which it reminds the farmer to note so thoroughly cover the superficial characteristics of the leading varieties of corn that there is absolutely no excuse for one to go wrong. The score card is the essence of simplicity. It is understood that it is to be used in the fall when the corn has fully matured. Seed selection should be confined to the field where it may be selected from the standing stocks, and not from the crib, where mice and rats abound. The vigor of the stock from which an ear is picked should be considered, though of course the ear itself is the transcendently important object. Having selected the seed in the field, the care of the same during the winter presents a problem of more or less significance. Briefly, the statement which adequately covers the case may be put thus: Keep the ears with husks on, but pulled back over butts, in a dry place, where the air is free to circulate without bringing with it particles of snow or rain. Extremes of heat and cold can not damage the seed if no moisture be present.

Suggestions respecting the preparation of the soil for the reception of seed are hardly appropriate, for nearly all farmers who have grown corn know that the ground should be put in fine tilth while it is beginning to warm in the spring. Passing this phase of the subject we come to consider cultivation, which has three essential objects, namely, the removal of weeds, the conservation of moisture and the aëration of the soil. Upon the system of cultivation employed in the production of corn largely depends the value of the crop. That the ordinary methods of cultivation practiced in Illinois and other states vastly could be improved is a fact which no reading farmer will attempt to dispute. It is potently illustrated by statistics of the United States government. There are 255,000 farmers in Illinois and a great many of them are corn growers. Statistics show that the State is growing corn at a loss. Why is this so? A consideration of the prevailing system of cultivation will enable us to arrive at proper conclusions, having studied the questions of pedigree, vitality and selection of seed.

The ordinary methods of cultivation disregard some of the most fundamental natural laws. They lose sight of principles which cannot long be overrun without penalty. In the first place ordinary cultivation as practiced on the average farm in Illinois is too deep; in the second place it is not frequent enough, and in the third place it is done with improper implements. Deep cultivation is highly injurious to corn plants because it disturbs, or rather seriously injures, their foraging roots. Insufficient cultivation violates the second rule given as one of the objects of cultivation, the conservation of moisture. In dry weather, such as we annually experience about the time corn is waist high, frequent cultivation is imperative. And this is when most farmers seem to think it unnecessary, their belief being based upon the fact that the weeds don't grow so fast and are not menacing the corn plants. It may be laid down as a safe rule to follow that during dry weather cultivation should be frequent and during wet weather less frequent. Frequent tillage during a drouth clogs, as it were, the capillary tubes in the soil and thus prevents the evaporation of moisture upon which the growth of the plants depends. It is far more economical to retain moisture already present by persistent tillage than wait for a rain, for during the interval the plants suffer from lack of sufficient moisture to satisfy the normal functions of plant growth. Hence we are prepared to accept as true the statements above made, which in substance are that when the drouth begins then should begin persistent cultivation. Another factor which influences cultivation, rendering it effectual or detrimental, is the kind of implements used. Most farmers in the cultivation of corn use the common tongue or tongueless cultivators, which have large and small shovels, the latter being used for the first cultivation,

sometimes for the second, while the former are utilized when the crop is "laid by" with the third or fourth plowing, which is usually deep and productive of ridges between the rows. The chief objection to which ordinary cultivators are open is that they do stirring and digging and loosening when skimming or surface cultivation would be advisable. Moreover, they are not fitted with what today is considered the most important cultivator attachment in use: the thin, wide, sharp shovel which skims the ground, destroying weeds and gently removing and redepositing particles of soil which form a mulch.

In general it may be said that there are two prevailing methods of cultivation—shallow and deep. The first has the happy faculty of doing two important things at the same time, namely, conserving moisture and avoiding root pruning, while the second is made unpopular by the fact that it root prunes while also conserving moisture. But the conservation of moisture is of little importance if the roots of plants are so pruned that they are unable to utilize it. Hence we are ready to choose the shallow system as the wiser of the two mentioned. We are ready to accept it for other reasons. It is known that the roots of practically all our agricultural plants get their moisture from the first nine inches of soil, which also contains nine-tenths of the available fertility of the soil. Deep cultivation, as has been asserted, root prunes. This in itself should be ample reason for entirely abandoning that system. The vital processes going forward in the plants are affected by the disturbance of the roots. If they are cut off, then root action, which, when understood, is at once regarded as of great importance, is interfered with and the plants suffer injury, though it may not be apparent to the casual observer. Nevertheless the yield will tell the story in dollars and cents. Plants with large root development give stronger growth than those with small root development. Upon the root development of plants depends the process of transpiration, the passing of water from the soil through the plants and, in the form of carbon dioxide, into the air. This process builds up the plants, brings about chemical action between the compounds in the plants and thus produces cell division, which we may call plant expansion or the growth of the plants.

The purpose of roots is to secure for the plants to which they are attached plant food and moisture. Plant food can not be absorbed readily in the absence of moisture. The presence of water in the soil renders the elements of fertility available for the plants. But no matter how rich the soil, nor how perfect its degree of moistness, if the plants have their roots cut off these advantages will be of no value. Every farmer will recall, when he is reminded that, while plowing corn, perhaps last summer, he dragged out of the soil thousands of fine rootlets, which collected on the shanks of the gangs just above the shovels, and which he removed when turning at the end of the rows. This was simply a case of root pruning, against which the science of corn culture so vigorously protests, and which must be discontinued if Illinois, for instance, is to grow corn at a profit, as she surely ought to do. As illustrating the effects of root pruning, reference may be made to an experiment which, in 1897, was conducted upon the experiment farm at Urbana. An acre of corn, not pruned, yielded 63 bushels; pruned two inches, an acre produced 62½ bushels; pruned four inches, 48 bushels, while the six inch pruning gave but 25 bushels. The word pruning, in each case, is equivalent to saying that the corn was cultivated at the various depths mentioned.

The offices of roots are, as we have seen, of the most vital character, and the roots themselves are the very mouths of the plants, serving them in the same capacity in which our mouths serve our bodies. As through the mouth goes all that builds tissue, gives strength and vigor to the body, so through the roots of plants goes the food which produces growth. Thus when roots are severed mouths are taken from the plants and less food is taken in, and therefore less growth is made. Another point showing the marvelous work done by the roots of corn plants is worth mentioning here. It is estimated that for every pound of dry matter in a corn plant, 600 pounds of water is required to produce it. This means that great quantities of water must pass through the roots.

In view of what has been said there should no longer remain doubt as to the ill effects of root pruning. It has been shown that this pruning is done by deep plowing, and we have seen that in the case of shallow cultivation the yield was much larger than in the case of root pruned plants. This prepares us for a proper recognition of the philosophy embodied in the sentence which briefly covers the entire question of cultivation, that the three objects of cultivation are best accomplished by that system which avoids root pruning, destroys weeds and thoroughly stirs the surface of the soil.

Reference might well be made in this connection to the value of a weeder or other similar implement in the annihilation of weeds and the stirring of the soil while the corn plants are young. It is strange that the weeder has not come into general use throughout the corn belt, since, by all who have used it, generous praise of its merits is given. The harrow, however, is made to take the place of a weeder on many farms, and the work, while not nearly so effectual, is nevertheless of value. The use of some such implement as the weeder will in time become universal so far as corn culture is concerned.

The kind of soil in which corn is growing will be of interest if considered in relation to cultivation. In general, loose or loamy soils require more cultivation than heavy or clay soils, which have finer soil particles and therefore retain moisture much more readily than do porous or loose soils. The character of the soil, however, will suggest to the corn grower the kind of treatment to which it should be subjected.

Before considering the final subdivision of this paper it might be well to add here a brief summary of the points which have been discussed in their logical positions with respect to one another.

Seed corn should have a pedigree. The planter should know something about the ancestry of the seed. Knowing this he will have little difficulty in recognizing in his crop the characteristics of the type. Vitality of seed corn should be thoroughly tested. Seed selection should be done in the field, and regularly every year, the score card being used. Cultivation should begin as soon as the plants are "up." Shallow cultivation should be the system employed. It should be more frequent in dry than in damp weather. Root pruning, above all things, should be scrupulously avoided.

Having produced the crop, there naturally arises the question, how may the most profit be realized from it? This question opens the door to a reservoir of very interesting and suggestive facts and figures. First, let us consider the effect of corn on the soil. That the uninterrupted growing of corn on a given piece of land for a period of years greatly diminishes the amount of plant food contained in the soil is attested by the fact that there is a steadily decreasing yield. In Illinois, the yield per acre is not half what it should be. In 1899 it was 37 bushels, grown at an average cost of \$9.05. The diminution in yield is due to the exhaustion of the fertilizing elements of the soil. Grain growing has extracted so much of the plant food from the soil that crops grown now have insufficient supplies upon which to draw. Every time an acre produces 30 bushels of corn, it yields to the crop 61 pounds of potash, 25 pounds of phosphoric acid and 83 pounds of nitrogen, or a total of 169 pounds of plant food, having a value of \$16.64, estimating the prices of the elements at the following respective figures per pound: four, seven and fifteen cents. If the stocks are permitted to decay in the field, about \$5.00 worth of plant food is restored. If they are left standing, and, in the spring, broken or dragged down and burned, the farmer is simply burning a \$5.00 bill. If the stocks, together with the grain, are sold off the farm, the farmer simply sells \$16 worth of his land along with the crop, but gets no return for it. The practice of selling corn is, in its correct analysis, as foolish as digging all the top soil from the farm and selling it, leaving hard clay upon which to grow crops. Assuming that from an acre we can secure 60 bushels of corn which utilizes \$16.64 worth of plant food in its growth, let us figure out what profit may be realized by the farmer who sells the grain at 35 cents per bushel. At this price it would bring \$21, from which we must subtract, if we can, the cost of the plant food which, leaving out that contained in the stocks—which would be left on the ground—would

be about \$11; then the cost of production and rent of land, \$10. These figures balance the account and the farmer comes out even, though it is a fact that he has sustained an indirect loss. Few farmers take into account the cost of production and the value of the plant food used, when calculating the profits of their corn crops. They seem to figure that the disposition of the plant food brings them the profit. Here lies the danger which menaces modern agriculture and the prosperity of generations yet unborn.

If the matter of corn production be considered as here indicated, there would no longer be any question as to the advisability of disposing of the crop in a different manner from that which is largely responsible for the depletion of our soils throughout the corn belt. The most profitable disposition possible to make of the corn crop is to feed it to stock on the farm. The animals will return more than 50 per cent of the plant food back to the soil. It is possible in this way to receive as high as 75 cents per bushel for corn. Corn fed to cattle will sustain a loss in plant food of about 20 per cent, for they will void more than 75 per cent of the total consumed. If hogs follow the cattle, they will utilize about 15 per cent of the unconsumed corn and return to the soil about 65 per cent of the plant food present in the original grain. From calculations made it appears that, considering the value of phosphoric acid, nitrogen and potash taken from the soil in 60 bushels of corn, the most profitable way to use the corn crop is to feed it to cattle followed by hogs.

If the cost of production, rent of land and value of plant food be taken into consideration it is impossible for any farmer to figure a profit from his corn if he sells it off his farm. The transaction will land him in debt every time. This is what a large number of farmers are doing. They may figure themselves a profit, but they mistake. If they don't see it now their posterity will see it.

If the corn growers of Illinois had in 1899 used good seed, practiced the proper system of cultivation and sold their crops through live stock on their farms, millions of dollars would have been added to the material prosperity of the State, while the fertility of the soil would have suffered little, if any, deterioration.

HOW TO IMPROVE CORN.

(By J. P. Ried of Delavan, at the Tazewell County Farmers' Institute, Feb. 5 to 7, 1901.)

The king of cereals, corn, is at present demanding the attention of all wideawake farmers. When we receive the government crop report and note the extremely low average yield of corn per acre in the United States, it seems incredible. But taking the report of each state separately, we conclude that it is correct. But there must be something wrong. Is our soil exhausted to such an extent that we can not produce a larger yield? That can not be the case for we find that years ago, when our Illinois soil was comparatively new, the average yield of corn per acre, was from 34 to 40 bushels, about the same as it is now.

If we plant our corn in rows three and one-half feet apart each way, we have 3,534 hills to the acre, and putting in on an average two and one-half kernels to the hill we have on the acre 8,835 stalks of corn, which I think you will admit is not planting too thick. Then allowing 120 ears of corn to the bushel we will grow 73.6 bushels per acre, provided every stalk bears an ear. This, however is nearly twice the actual amount grown in our State. There are many causes for this immense loss, two of which I wish to speak of. They are: Poor seed, from which we often lose one-fourth our crop, and the barren stalks—that is, those not producing an ear of corn. It has been ascertained by actual count in the State of Illinois, that 32 per cent of our corn stalks are barren, which means a loss of 23.5 bushels of corn to the acre. It is certainly worth our while to remedy these difficulties.

Had I been asked several years ago how to get rid of barren stalks, I should have said, "Do it by selection." But this method has brought little success for, no matter how good the ear you select to plant, it may have been

fertilized by pollen from the barren as well as the strong, ear-bearing plants around it. The same principle holds good in the improvement of corn and other grains as in the improvement of live stock. My method now of getting rid of barren stocks is to breed them out. This is done by removing the tassel or male portion of every plant that is small, weak, deformed or without ears. Then we have left only the strong plants to produce pollen for fertilization. I would not recommend undertaking this process of elimination in a 75 or 100 acre field in which perhaps one-third of the stalks are inferior, but take an acre or two, let it be away from other fields of corn, if possible, in order to carry on your work successfully and with some saving of labor. Measure off a plat 30 rows wide with 120 hills in a row, making a plat containing a little more than an acre, and convenient to work with. Select 30 of your most perfect uniform ears, shell six rows of kernels lengthwise of each ear and plant one row of corn in your plat from each ear, doing the planting by hand. If your special acre is near other corn, shell enough from the ears to plant six or eight rows around it so as to prevent, in a measure, its being pollenized by corn in the adjoining field. Cultivate as you do your other corn, provided that is done thoroughly. When the corn begins to ear is the time for cutting out the tassels from every barren, weak or deformed stalk, so as to prevent them from scattering pollen.

It is a good plan to save a few of your best ears to compare future crops with. But do not expect to see any improvement the first year, for the seed you planted was fertilized last year by pollen from the strong and weak plants, just as it happened.

In the fall husk and weigh each row in your plat separately, and see which row produces the greatest number of perfect ears, and the greatest weight of corn. Then select 30 of your best ears for next year's seed plat, using the remainder of the corn raised on this acre for planting the main crop.

The late Professor Morrow worked on this plan at the University of Illinois a number of years ago, and in five years reduced the number of barren stalks from 33 per cent to about 8 per cent.

SEED CORN AND SOME STANDARD VARIETIES FOR ILLINOIS.

(By Archibald D. Shamel, instructor in farm crops, College of Agriculture, and specialist in farm crops, in Experiment Station)

Illinois' annual corn crop, about 240,000,000 bushels, is raised on nearly 8,000,000 acres of land. It requires about 1,000,000 bushels of seed corn to plant the corn fields of this State.

If the character of the seed has any considerable influence upon the crop produced, then the production and use of the best possible seed corn becomes a matter of tremendous importance.

What is the quality of seed corn planted by the Illinois farmers? To answer this question it will be necessary to study the character of seed corn under several different heads.

Uniformity.—As a rule little attention has been given to the character of the seed corn; little examination has been made of the proportion of corn to cob, of the purity of color, the space between rows, the filling out of ends, the length, circumference, or shape, or of any of the important points which go to make up a good ear of corn.

It has been found by seed corn growers that the length, circumference or shape of the ear can be varied at will by selection, and there is every reason to believe that these characteristics can be so fixed that practically all of the ears in a field grown from pedigreed, uniform seed will be of approximately uniform size and shape. Further, it has been found that the number of rows of kernels on the cob, the filling out of the ends, or other characteristics, can be improved by planting from seed having these characteristics.

It has been demonstrated that it is not good practice to plant small kernels of grain of any sort. Therefore, it is not good policy to plant the tip kernels. As the butt kernels usually vary greatly in size from the kernels on the rest of the ear, it is a good plan to shell off and discard both the tips and butts of the ears selected for seed. Again, as the butts of the ears mature first and the tips last, it is probable that these parts have been fertilized by pollen of an early or late variety from some neighboring field; so by shelling off the butts and tips, part of the danger of mixed seed can be avoided. In general, shell off the small and extremely large kernels, so that the portion of the ear remaining for seed has kernels of approximately uniform size. With most varieties of corn, about one-half inch of butt kernels and one inch of tip kernels should usually be shelled off.

Vitality.—Owing to a late spring or early frosts, it frequently happens that the seed corn does not fully mature. In this condition the ear is likely to mold and decay, thus destroying the vitality of the grain. As the majority of farmers in Illinois allow the seed corn to remain in the general crib during the winter exposed to the sudden and violent changes in temperature, such corn, full of moisture, will freeze, and consequently the life of the germ may be weakened or destroyed. The seed corn in central Illinois, selected from the crop of 1898, was so much injured in this way that the University tests of the vitality of seed corn sent in by farmers from this section of the State, gave an average of only 76 per cent germinating. Such seed was not fit to plant, but as no provision had been made by the farmers for drying and properly preserving seed corn, and as this was the only seed available, it was planted with a resultant poor stand, light crop and loss of profits.

Immature seed should not be planted for several reasons: First, such kernels do not contain as much plant food as those which are fully developed, and thus do not provide as much nourishment for the young plants which, consequently, do not get so vigorous and healthy a start as those from mature seeds. Second, the excessive moisture in the immature seeds renders them liable to begin to germinate in the fall in the crib, and thus use up a part of their strength, or a sudden drop in temperature may freeze the corn and destroy the life of the seed.

Seed corn should test 95 per cent vitality, i. e., of the seed planted in the seed bed 95 per cent should grow. If the seed does not give this test of vitality, a poor stand will be the result. Nor is it wise for the farmer to try to make up for poor seed by planting a greater number of grains, because of seeds which give a low test of vitality many of those which do grow lack strength and vigor and will consequently produce weak plants. Furthermore, an uneven stand will surely result, some hills being over crowded (frequently with weak plants) and other hills being left with perhaps no plants at all because of the unequal distribution of the seed that will germinate. Seed of low vitality will inevitably tend to the production of a poor crop. It is important, therefore, that the farmer make a test of the vitality in order that he may know the quality of his seed. A most simple, effective, and practical method of testing the vitality of seed corn is as follows: Fill common dinner plates nearly level full of fine sand, pour water over the sand until it is more than saturated, shake gently to level the sand, allow it to settle, and then drain off the surplus water. Push 50 kernels into the sand in each plate, turn a smaller plate over the sand to prevent too rapid evaporation of moisture, and set both in a warm place. Keep the sand moist, and in seven days all of the healthy kernels should sprout. By counting the kernels sprouted, the per cent of good seed can easily be computed.

Pedigree.—As a matter of fact the history of the development of most of the strains of corn now grown in the State, is very brief. With few exceptions no record has been kept of the various crosses, and but few varieties have been selected toward a particular type for a special purpose for any considerable length of time. There have been but few systematic or practical attempts at improvement, and the result is that we are, as a rule, growing mongrel or scrub varieties. A few varieties, however, have been carefully selected, in accordance with definite ideas as to improvement, for about a quarter of a century, and have developed certain characteristics, dis-

tinguishing them from other varieties. In such instances it has been found that, if the corn has been selected toward a uniform standard type, the yield has been increased because of the production of uniformly better ears. The yields of varieties tested at this experiment station from 1888 to 1900 inclusive, show the same result. Also enough has been accomplished to prove that almost any characteristic desired in a variety can be fixed by persistent selection, and that these characteristics can be continually improved by further selection.

The development of the per cent of sugar in the sugar beet furnishes a splendid illustration of the possibilities of plant breeding. Starting with ordinary beets with about 4 per cent of sugar, the French and German seed growers by selection have increased the sugar content to an average of 12 to 16 per cent, making it possible to manufacture profitably sugar from this source. There is little doubt that there are as great or greater possibilities in the corn plant, and that these possibilities can be as easily developed as the sugar content of the beet. The development of our present breeds of cattle and other live stock plainly shows how careful, systematic, and intelligent selection and breeding have improved these breeds. We have developed the dairy type and the beef type from the same source; the light and draft horse from the same type by breeding and selection.

Corn responds to selection as readily as do beets and cattle, and there is no longer any doubt but that varieties of corn can be further improved by similar methods.

It has been found that the chemical composition of the corn kernel varies, and the experiments conducted by this station have conclusively shown that the proportion of the constituents of chemical composition can be varied at the will of the breeder (Bulletin No. 55, Illinois Experiment Station, "Improvement in the Chemical Composition of the Corn Kernel.") In other words, it has been found possible to increase or decrease the proportion of oil, or of starch, or of protein, by seed selection. When seed high in protein is planted, a product in protein is the result, and *vice versa*. The same thing holds true with seed high in starch or oil.

What is true of the chemical composition, is eminently true of the physical characteristics of the ears. For instance, the shape of the Leaming kernel has been changed by twenty-five years of selection from the original shoe peg shaped kernel to a broader, deep grain with a deeper dent. Along with this variation in the shape of the kernel has gone an increase in length of ear and a slight increase in circumference. Again, in the case of the Boone county white variety, the tips of the original corn were poorly filled. This fact was due principally to the reason that the Boone county white ears are very long. As an ear matures from the butt towards the tip, the tip maturing last, it frequently happened that the pollen was all gone before the tips of some of these ears had been fertilized. By selecting for seed corn only those ears which were well filled, in other words, the ears all parts of which matured in time for the pollen to fertilize them, the best samples of this variety have become well filled at the tips.

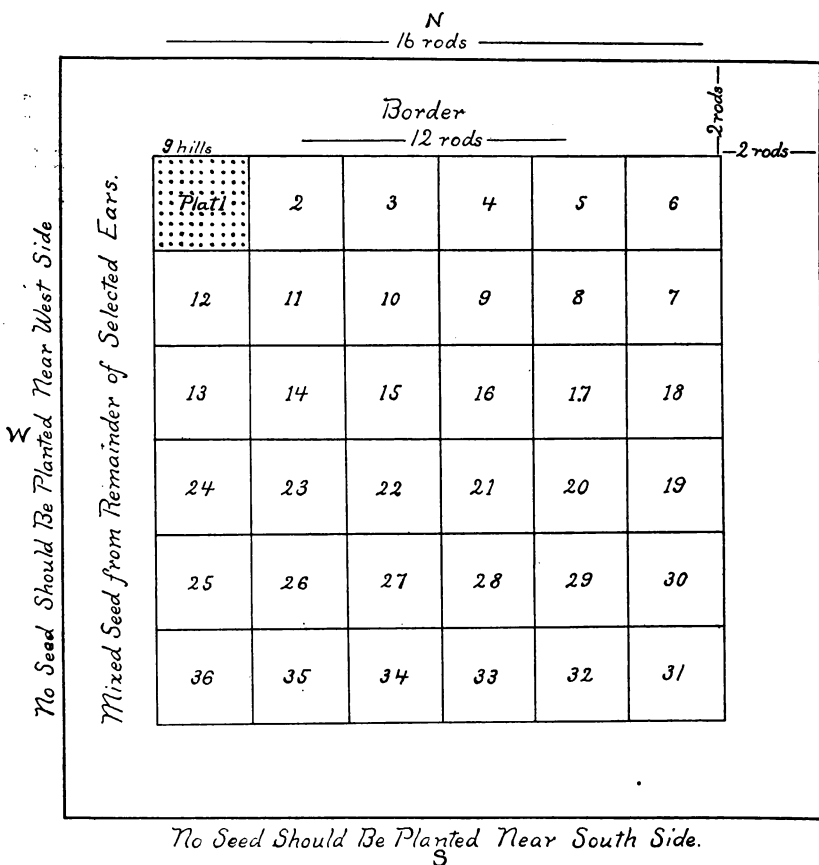
The Golden Eagle corn was originally a medium to shallow grained corn, but by constant selection toward deeper kernels and deeper dent, the variety has developed a very deep kernel with an unusually deep indentation. It has been found at the University, through five years of experimentation, that the amount of husks, length of shank, size of stalk, position of ear on the stalk, the number of leaves, in fact every physical characteristic can be varied by simple selection in a short space of time.

At present our meager records show only the incomplete history of the parentage of the varieties of corn. It is just as important that we know the character of every part of the corn plant, as that we know every characteristic of the animal. The size, shape and characteristics of the stalk strongly influence the development of the ear; and it is probable also that we shall need to know the nature of the root development in order to breed intelligently.

How to Grow Seed Corn.—The farmer who is especially interested in corn can well afford to grow his own stock seed. He can select for those qualities he particularly desires, adapt the corn to his particular conditions of soil and climate, and continue to produce a constantly improving grade of corn.

The first essential in growing seed corn is, that one obtain from some reliable corn breeder thirty to forty ears of highly bred seed of the variety desired. Corn suitable for growing seed is difficult to obtain. It does not exist in large quantities because of the high standard of perfection which must be maintained in its selection, and so it must be very expensive, but the farmer can well afford to pay a high price in order to get it for breeding purposes. It is absolutely necessary that the farmer obtain this seed corn in the ear, because it is impossible to judge accurately the quality of seed corn after it is shelled.

1 An acre or more of good land should be selected which is located at a distance of about forty rods from any other corn field (unless thick groves or hedges are between) and, if possible, further, especially in the direction of



the most prevalent summer winds, in order that the corn may not be mixed by the pollen from other varieties, or from low grade corn of the same variety. After the seed bed is well prepared and the field marked both ways

plant the corn from each ear by itself, either in plots about nine or ten hills square, or in rows running lengthwise of the field. The planting is best done by hand, and must be so done if the plot system is adopted. A square field of 36 square plots of 100 hills each is a little more than one acre; or 28 rows of 127 hills each make practically an exact acre, if the hills are three feet six inches apart each way. Discard all tips and butts and any other abnormal or mixed kernels and plant each plot or each row with corn from a single ear. What is left of the ears may be mixed together and used to plant a border around the acre field to further protect it from foreign pollen. This border is, of course, cultivated with the rest of the field. Keep each year a carefully selected, typical ear for purposes of comparison and to show changes effected year by year.

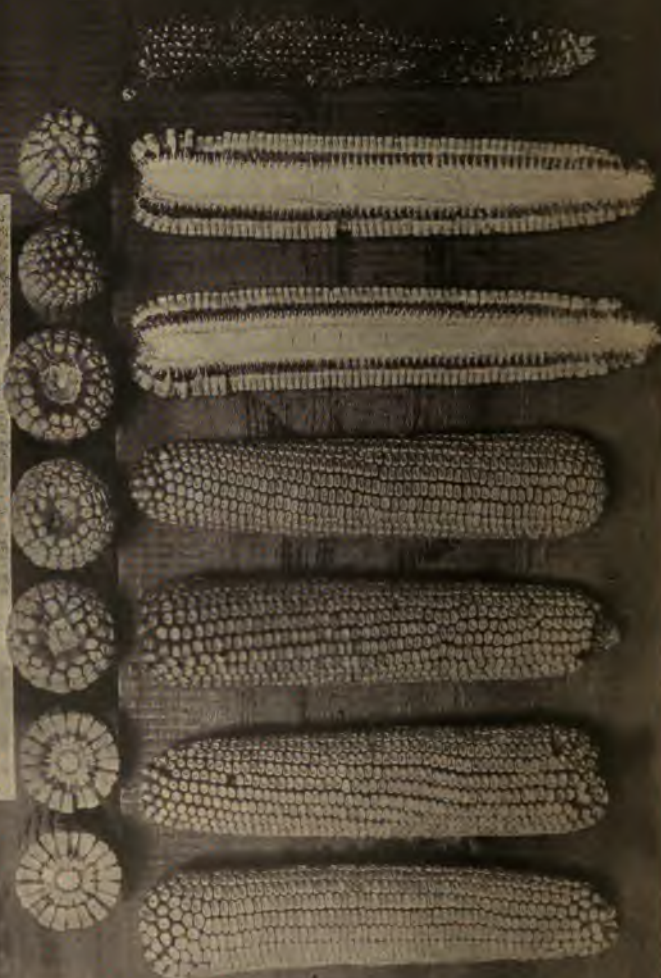
As soon as the ears begin to set and the character of the stalks can be determined, go through the field and cut out all of the poor, dwarfed or barren stalks, and also any volunteer or accidental stalks which may appear in the field, so that the pollen from these inferior stalks can not fertilize the future seed. The same object can be accomplished by detasseling these imperfect stalks just as the tassels begin to peep through the leaves.

Husk each plot or row grown from a single ear separately. Examine the ears closely and select ears for the next year's seed acre from those plots or rows having the greatest proportion of ears true to type. The ears which produce this large proportion of ears true to type must have a prepotency for the production of ears of this uniform type, and by planting ears from such a crop, which has inherited this prepotency, and by following this method of selection for a series of years, a rapid improvement will take place.

After the required number of the very best ears has been taken as described for the next year's seed acre, a considerable quantity of highly bred seed can be selected for common planting or for planting in a separate field to produce larger quantities of stock seed. This stock seed being but one or two generations removed from the highest type of seed will naturally retain qualities and preserve characteristics of the highly bred corn.

The two systems of planting, which may be termed the "plot system" and the "row system," are both used, and both will doubtless give good results. It is thought that the plot system may effect a closer in-breeding, but whether this is true, or whether, if it be true, it is desirable or advantageous is not yet determined. For simplicity, the row system is recommended. It has been used for several years at this experiment station in the above mentioned corn breeding experiments by which marked improvement has been effected in the chemical composition of corn, and it has been adopted by several breeders who are taking up similar lines of corn breeding.

REID YELLOW DENT
From
JAMES L. REID.



REID'S YELLOW DENT

Characteristics. 1. Ear, slowly tapering. 2. Circumference, 6.9 inches; length, 9.5 inches. 3. Kernels, very firm on cob and upright. 4. Number of rows, 18 to 24. 5. Space between rows, very narrow. 6. Kernels in distinct pairs of rows. 7. Butt, deeply rounded, very compressed, with kernels diverging. 8. Kernels, light yellow, square at top, tapering to a point by straight lines with long smooth to pinched indentation. 9. Shank, small. 10. Cob, medium, red.

History.—The following is the history of Reid's yellow dent as given by the originator and breeder, Mr. James L. Reid of Delavan, Ill.

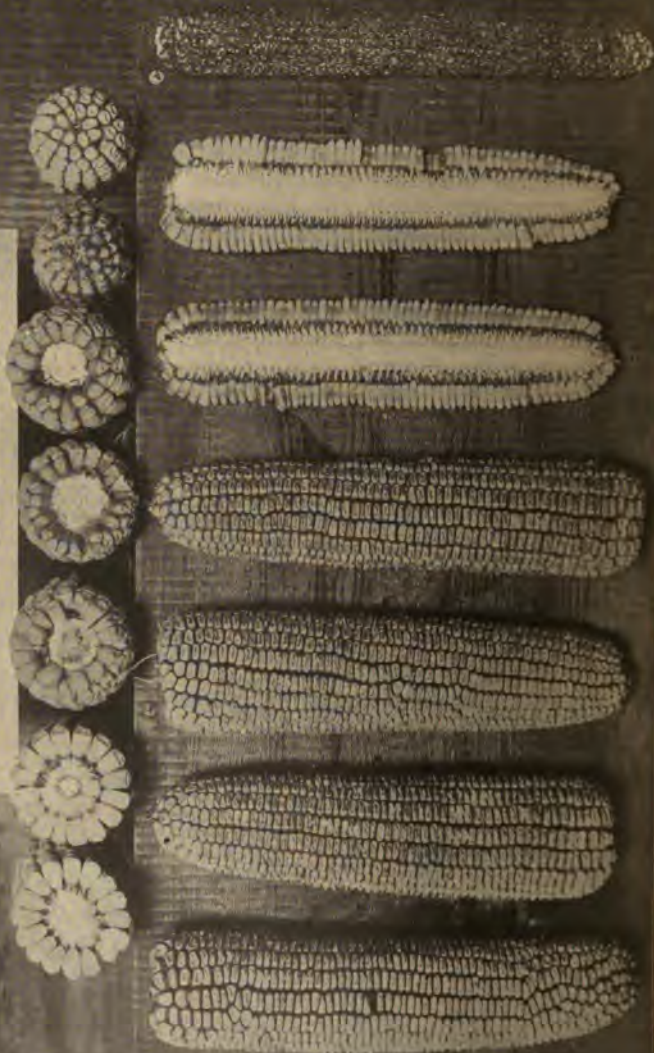
In 1846 Robert Reid brought from Brown county, Ohio, to Illinois a variety of corn called at that time the "Gordon Hopkin's corn." This was reddish colored, grown largely in the vicinity of the Red Oak settlement, the home of Mr. Robert Reid. The corn was planted near Delavan, Ill., by Robert Reid late in the spring of 1846; and a fair yield of immature corn was harvested. Seed was selected from this crop for the next year's planting, but on account of the immaturity of the seed a poor stand was the result. The field was replanted with seed of the "Little Yellow corn," the missing hills being planted with a hoe. The corn has not been purposely mixed by Mr. Reid since 1847, and has been improved by selection since that date.

It is adapted to central and northern sections of Illinois. This variety is of early medium maturity. The characteristics are very constant in all samples, due to the fact that they have been strongly impressed by fifty years' selection. The photographs of the samples of Reid's yellow dent, one from the originator, Mr. J. L. Reid, the other from Mr. A. C. Rhoades, illustrate the uniformity of the characteristics running through the Reid variety. Mr. Rhoades secured seed from Mr. Reid about five years ago, and has grown this variety without intentional crossing since that time. In the samples of Mr. Rhoades' corn sent to the experiment station for examination, the indentation and shape of kernel, shape of ear, filling out at tips and butts, length and circumference, size and shape of cob, are uniformly and strongly Reid characteristics. This condition shows very decidedly that the characteristics that have been impressed on this variety of corn are strongly fixed and are uniformly reproduced. It offers one of the best illustrations of the effect of intelligent selection. The original corn with small ears, poorly filled out and small number of rows being changed by selection to one of the most improved varieties grown.

GOLDEN EAGLE

From

H.B. PERRY.



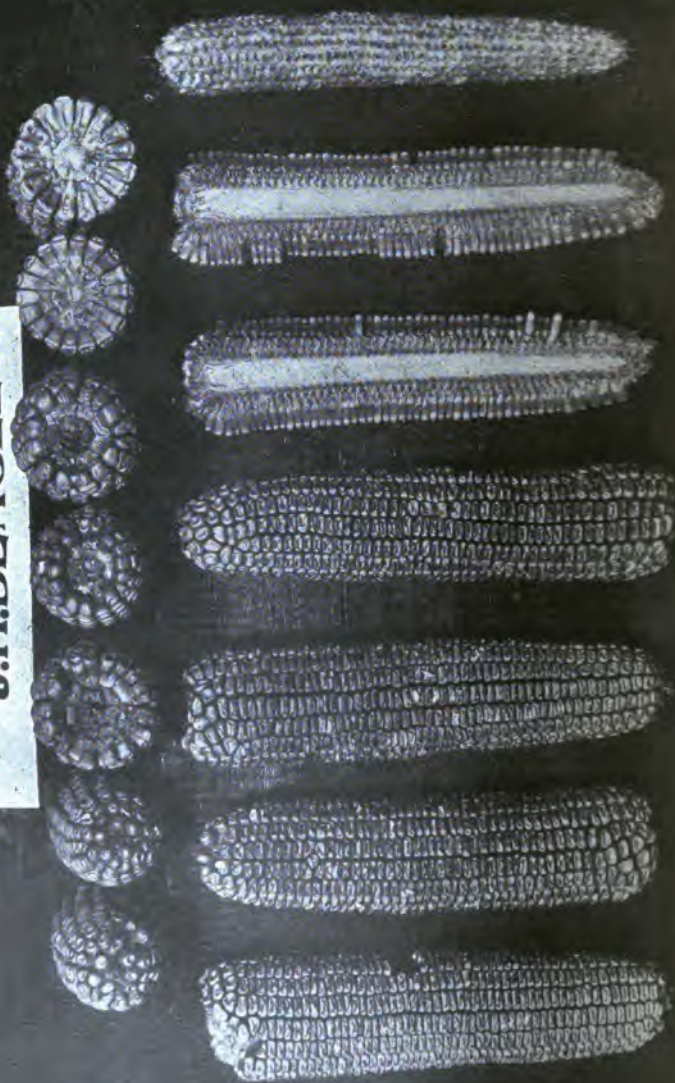
GOLDEN EAGLE.

History.—The Golden Eagle variety was originated by Mr. H. B. Perry of Toulon, Ill., in 1871. Mr. Perry selected seed from the so called, "Mason County Yellow" corn. This corn had rather small ears, red cobs, and small kernels of a bright yellow color. The selection since that time has been towards a large proportion of corn to cob. This variety has been bred by Mr. Perry on his farm without mixture since 1871 and has developed certain prominent characteristics, particularly deep grain and well filled ears.

The Golden Eagle is of medium maturity, usually maturing in from 110 to 115 days; adapted to the central and the south half of the northern division of Illinois. The characteristics are very uniform in samples grown under different conditions, a result of 29 years of continuous breeding without crossing. The variety at present shows a great improvement over the original type and is one of the best examples of the results of selection.

Characteristics.—1. Ear, slowly tapering. 2. Circumference, 17 inches; length, 8.9 inches. 3. Kernels, loose on cob and upright. 4. Number of rows, 16 to 20. 5. Space between rows, medium to wide. 6. Kernels, deep. 7. Butt, moderately rounded, compressed. 8. Kernels, deep yellow, very marked, rough projection at summit, straight edges, and rough projection dented. 9. Shank, small. 10. Cob, small, red.

SILVER MINE
from
J.H.BEAGLEY.



IOWA SILVER MINE.

History.—The Iowa Silver Mine variety of corn was originated by Mr. J. H. Beagley of Sibley, Ill., from seed selected from a prize winning exhibit of white corn at the Ford County Farmers' Institute in 1890. After sufficient corn had been grown to plant a 20 acre field, the crop was sold to the Iowa Seed company, which named it Iowa Silver Mine and sold large quantities of seed to Illinois farmers. The originator has selected towards a creamy white color, cylindrical in shape, tapering slightly at tip, with an average of about 18 rows of kernels. This variety has been developed by selection, no crossing or mixing of varieties having occurred. The variety characteristics are strong, especially in those strains grown in the northern division of the State.

The variety is from medium to early maturing, adapted to the north half of the central and the northern section of the State.

Characteristics.—1. Ears, partly cylindrical and partly slowly tapering. 2. Circumference, 7.2 inches; length, 8.7 inches. 3. Kernels, firm on cob and upright. 4. Number of rows, 16 to 20. 5. Space between rows, medium. 6. Kernels in distinct pairs of rows, developing distinct rows at tips. 7. Butt, moderately rounded, compressed. 8. Kernels, cream white, deep, even at summit except for rough projection, straight edges, tapering, rough projection dented. 9. Shank, medium. 10. Cob, small, red.

RILEY'S FAVORITE

From

JAMES RILEY.



RILEY'S FAVORITE.

History.—The Riley's Favorite variety was originated by Mr. James Riley of Thorntown, Ind., in 1885. It is a hybrid, the result of a cross of a large late corn, the Golden Yellow, with a small early corn, the Pride of the North. It has been bred in the following manner: A plot of one-half acre was selected away from any other variety of corn and planted in the usual way. As soon as the tassels began to appear, the barren and diseased stalks were all removed, leaving only healthy stalks. In this way future seed could not be fertilized by pollen from barren stalks. Mr. Riley selected towards a medium sized ear, small cob, well filled tips and butts, and stalk of medium height.

The Riley's Favorite variety is of early maturity, adapted to the central and northern divisions of Illinois.

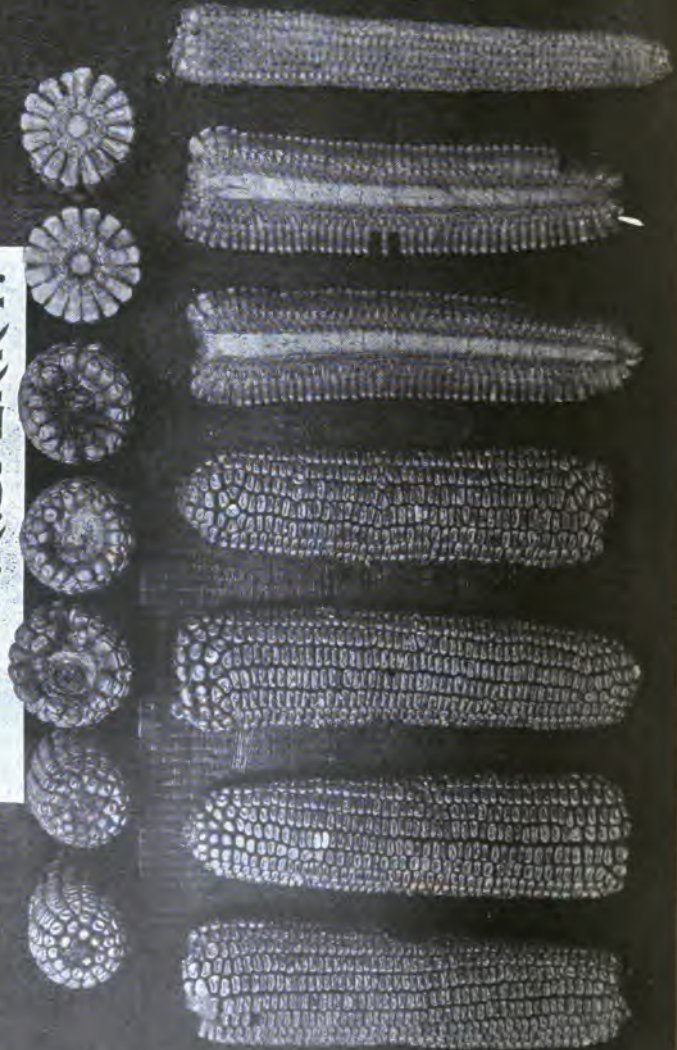
This variety strongly illustrates the fact that improvement takes place in corn breeding through selection without crossing. Our varieties are sufficiently variable without introducing unknown characteristics, and selection will tend to develop these variations along the lines desired by the corn breeder.

Characteristics.—1. Ear, slowly tapering. 2. Circumference, 7.1 inches, length nine inches. 3. Kernels loose on cob and upright. 4. Number of rows, 16 to 20. 5. Space between rows, wide. 6. Kernels in distinct pairs of rows, about half of the ears having distinct rows at tips. 7. Butt, moderately rounded, compressed. 8. Kernels, yellow, straight wedge-shape, pinched to rough projection dented, with a tendency in the rough summits to be beaked. 9. Shank, medium to small. 10. Cob, small, red.

WHITE SUPERIOR

From

P.R. SPERRY.



WHITE SUPERIOR.

History.—The history of the White Superior variety as nearly as can be learned from the account of Mr. P. R. Sperry of Eleanor, Ill., a breeder of this corn, is as follows:

Mr. Shaffer, a seed corn specialist, introduced from Pennsylvania to Warren county, Ill., a variety of corn he called the White Elephant, about 1880. In 1895 Mr. Sperry began selecting seed from this variety for a different type than the White Elephant. He selected one bushel of seed of the type desired and planted this seed by itself, so that it would not be mixed with any other variety. In changing the type of corn Mr. Sperry changed the name to the White Superior. His selection was as follows: Kernels one-half inch in length and one-fourth inch in width; ears 11 inches long, seven and one-half inches in circumference, with little space between rows. The White Superior is of medium maturity, and is adapted to the central and north central sections of the State.

Characteristics.—1. Ear, slowly tapering. 2. Circumference, 7 inches; length 8.4 inches. 3. Kernels, firm on cob and upright. 4. Number of rows, 18 to 20. 5. Space between rows, medium. 6. Kernels in distinct rows. 7. Butt, shallow, rounded, depressed, slightly compressed. 8. Kernels white, tapering with slightly curved edges and rough projection dented. 9. Shank, medium to large. 10. Cob, medium, white.

LEAMING

From

J.H.COOLIDGE.



LEAMING.

History.—The Leaming variety was originated by Mr. J. S. Leaming of Wilmington, Ohio, in 1826. Mr. Leaming began selecting seed at this time from the ordinary yellow corn grown on the "Little Miami Bottoms," Hamlin county, Ohio. He selected this corn toward a standard type in his mind for 56 years, to be followed by his son, J. S. Leaming, Jr. His method of selection was to go through a field as soon as the earliest husks began to show signs of ripening, selecting ears from stalks tapering from butt to tassel, ears well filled over points, straight rows of kernels, and ripening in from 90 to 100 days.

The Leaming strain as grown by Mr. E. E. Chester, of Champaign, Ill., is from seed secured from Mr. J. S. Leaming in 1886. Mr. Chester has selected corn for seed from those ears showing the first ripening of the husk so as to secure corn maturing in from 100 to 120 days. No crossing has been allowed, the corn planted in large isolated fields.

Mr. James Riley, of Thorntown, Ind., secured seed of the Leaming variety from Mr. Chester. Mr. Riley selected for a thick, strong stalk, ears close to the ground, medium cob, deep grain, and bright yellow kernels.

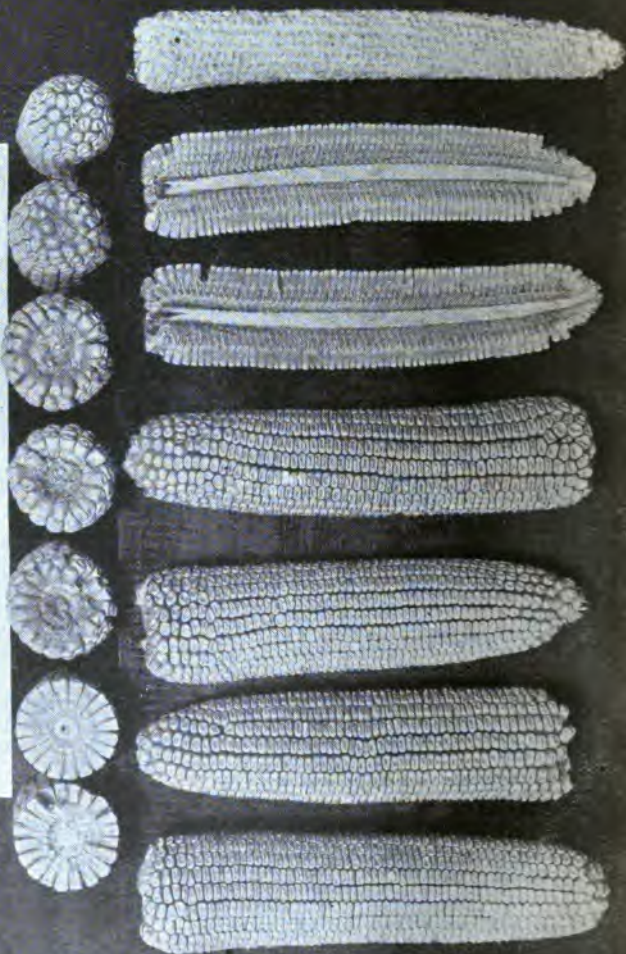
Mr. J. H. Coolidge Galesburg, Ill., secured Leaming seed from Mr. Chester. Mr. Coolidge has selected for a deep grain, long ear, well filled tip and butt, uniform rows of kernels and early maturity.

The Leaming variety has the most uniform characteristics of any variety of yellow corn grown. Its adaptation to widely different conditions of soil and climate by selection has done much to strengthen these characteristics. It is no doubt the variety from which many varieties of yellow corn have been developed, as most of the yellow varieties show some of the characteristics of the Leaming corn; and when their history is traced back they are usually found to have been developed from the Leaming seed.

The Leaming variety is of medium maturity adapted to the central division of Illinois. The three-quarters of a century of breeding has fixed the following characteristics in this variety, and they can be found strongly developed in strains bred by different corn breeders, modified by the breeders in his selection of seed.

Characteristics.—Ears, tapering. 2. Circumference seven inches, length 9.3 inches. 3. Kernels firm on cob and mostly upright. 4. Number of rows, 16 to 24, with tendency to drop rows about the middle of ear. 5. Space between rows, medium. 6. Kernels in distinct pairs of rows, mixed at tip. 7. Butt, moderately rounded, slightly compressed, with tendency to expand. 8. Kernels yellow, wedge-shape, with square cut summits and nearly straight edges, long dimpled to pinched dented. 9. Shank, medium to large. 10. Cob, medium, red.

BOONE COUNTY WHITE
From
JAMES RILEY.



BOONE COUNTY WHITE.

History.—The Boone County White* corn was originated by Mr. James Riley of Thorntown, Boone county, Ind. Mr. Riley began selection from a large, coarse variety of corn grown in Boone county, commonly known as the White Mastodon, in 1876. This White Mastodon seed secured by Mr. Riley was planted in a separate field from other varieties and has never been crossed, being changed in type by simple selection. Mr. Riley attempted to remove the barren stalks by cutting out such stalks before they produced pollen. After several years of selection he gave his new type of corn a new name, "Boone County White."†

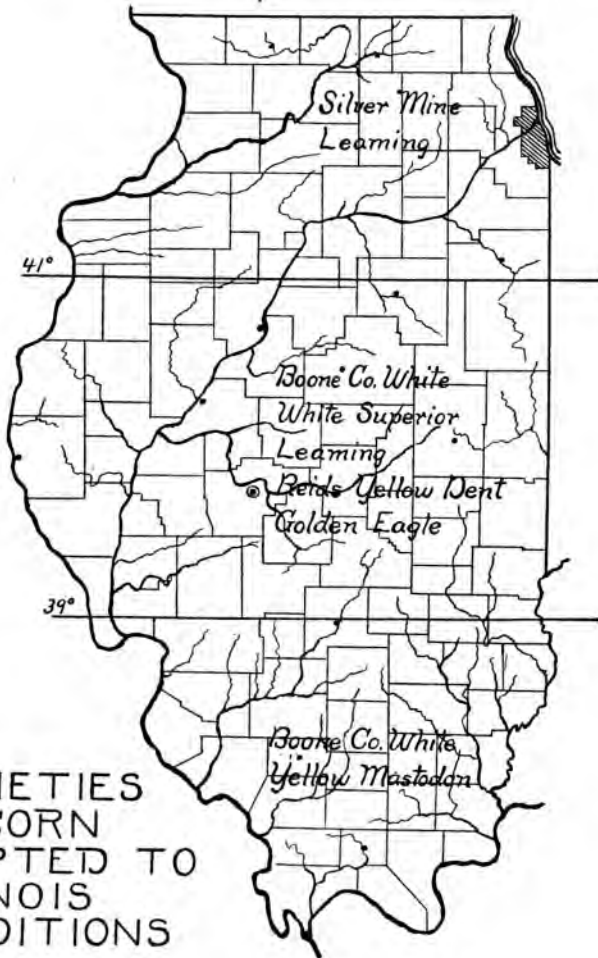
Seed of the Boone County White variety was early secured by Mr. O. C. Black of Champaign county, Ill., and by careful selection for about ten years, the characteristics of shape of ear, kernel and cob, and the indentation of the kernel have been changed. The proportion of circumference to length has been increased by Mr. Black. The indentation of kernel in the Black type is deeper than in the Riley type, but the shape of kernel has not been greatly changed. No doubt that by continued selection along the lines already laid down by Mr. Black and other growers of the Boone County White variety a distinct type can be produced.

The Boone County White variety is of medium to late maturity, adapted to central and southern sections of Illinois. It has been bred for large ears, and consequently matures slowly. There is a tendency to the production of a poorly filled tip on account of the length of the ear, which must be overcome by careful selection.

Characteristics.—1. Ear, slowly tapering. 2. Circumference, 7.5 inches; length, 9.3 inches. 3. Kernels, firm on cob and upright. 4. Number of rows, 16 to 22. 5. Space between rows, medium to wide. 6. Kernels in distinct pairs of rows, developing distinct rows at tip. 7. Butt, moderately rounded, slightly compressed, enlarged or expanded. 8. Kernels white, broad even at summit with slightly curved edges and creased to rough projection indentation. 9. Shank, medium. 10. Cob, medium to large, white.

* The so called white prolific variety has doubtless come from the same source as the Boone County White, having been bred by Mr. W. S. Dungan of Franklin, Johnson county, Ind., and later by Mr. H. F. McMahon of Fairfield, Ind.

† During recent years a large number of corn growers have begun to breed the Boone County White variety, and at present it is grown very extensively over the central and southern sections of Illinois. During this wide distribution this corn, grown under different conditions of soil and climate, has retained the characteristics imparted to it by the long course of selection by the originator. Its adaptation to extreme conditions of soil and climate amply proves the fact that our varieties of corn have sufficient power of variation within themselves to permit of almost any change or improvement, without crossing or the intermingling of varieties.



VARIETIES
OF CORN
ADAPTED TO
ILLINOIS
CONDITIONS

PASTURE AND CARE OF PASTURE.

Paper read by W. C. Slemons of Paris, Ill., at Edgar Co. Farmers' Institute, Dec. 19, 1900.

The question of pasture throughout the great central Mississippi valley and corn-growing belt of the United States is one of the vital questions for the farmers and all those interested in agricultural pursuits. We one and all look at the various products of the farm from a financial point of view; first, while that is true there are unbounded pleasures to a "genuine farmer" in looking over the fields of yellow wheat, oats, dark green corn and grass, and another good feature of farming is that we should see more of than we do, a set of first-class cows and calves, of short horn, Hereford, or polled breeds running on those fields of grass. Be those fields large or small, on this point I would like to emphasize and repeat, that we can not afford to graze our pasture lands with any other class of stock. With good stock on your farm there will naturally follow the desire for good pasture. There are several good kinds of pasture, among which I could mention blue grass, timothy and clover, and also a mixture of timothy and clover, which I consider one of the very best. Blue grass sod, to get a good firm set, often takes years. And I would advise you never to plow up a firm stand of blue grass as long as it remains good. Blue grass is best suited for early spring, late fall and winter pasture. During the hot, dry months of July, August and September they should have very little, if any, stock upon them; by so letting them have a vacation or rest the growth of those months protects the roots from the hot, burning rays of the sun, and they are thereby enabled to spread and grow more dense and stronger, while the top growth makes protection for the second or fall growth, and both together make the best late fall and winter pasture we have.

Now let us go back and take a view of the other kinds of grasses: Timothy alone is a very good pasture, but I would always advise a mixture with clover. When sowing the seed to start your pasture make seed about two-thirds clover, and don't above all things be afraid of getting it too thick on the ground, for the reason that you can't expect a thick, strong top growth without a good, thick sod—and how can you get this without sowing plenty of seed? Don't have to wait, as we farmers say, for our grass to thicken up. Mixed pastures as I have spoken of, will stand the extreme heat and dry weather that we look for during the months of July, August and September, and will afford you good pasture until late in the fall. When your blue grass has started its second growth for winter you will find good results from the summer growth, that has cured and turned into a good feed, taken in connection with the green second crop.

There is another phase of this question of pasture that I feel disposed to allude to before I close: In this section of the country we have a great variety of different soils, and situated as we are in Edgar county, just on the dividing line of the prairie and timber lands, could I not properly ask this question? And if I don't allude to it at all, we might be deprived of the good results of this theme of a Farmers' Institute, "Is there any difference in the results obtained in the way of profits, on what kind or character of soil on which these grasses are grown?" When I say profits, I wish to call your attention to this fact as a base, that we all have to count from a relative market price of the lands on which our pasture grasses are produced. What do I hear from the gentleman on the black, rich loam on the prairie—the man who would say that corn is king; next the man whose farm borders along the prairie and timber has some of the rich loam as well as some of the jack oak. A little farther from the dividing line, I think I heard the man that lives where the black walnut, sugar and elm trees grow, say something. Still again another voice, from the white oak, hickory and burr oak groves. We do not and can not all live on any one of these various kinds of soil, but we all have some knowledge of their market price, and from that market price we must count profits, if there are any. With only a limited experience in connection with observation, I have formed this opinion, that it takes a less growth of grass, grown on walnut, sugar or elm land to make the same gain of flesh than it does on the black corn land. I will not attempt an explanation from a scientific standpoint, for I would fail. I will let the professor in that line

do that. Some practical reasons, such as the benefit of good shade, running spring water and not so many flies, will suffice for this time. One other thing in conclusion, we all, or most of us, think in May and June that we have more pasture than we will need. Wait; don't be in a hurry until the hot, dry season comes, and you may reach a different conclusion.

BROOM CORN CULTURE.

(By J. O. Toland, Humbolt.)

Broom corn, the great agricultural product of central Illinois, is a tropical plant adapted to hot, dry weather, much as sugar cane or sorghum is. It is produced with good results on any good corn land. The quality of brush depends on the soil and climate, the best quality being in central Illinois, especially in Coles, Douglas, Edgar and Moultrie counties, they producing two-thirds of the supply. The consumption is annually 35,000 tons.

The preparation of the soil should have careful attention; all stalks and other field rubbish should be removed; the ground should be broken up as soon as the field is in proper condition; plow the same depth as for Indian corn or maize; let it stand until about the 20th of May, then disk and give vigorous harrowing; if it is rough and cloddy roll until it is fine and well broken up. It should be in the same condition as soil for a seed bed for wheat.

The seed should be thoroughly cleaned, using one bushel to 20 acres. Adjust the planter three feet four inches wide and drill from 55 to 60 seeds to the rod in the row. It should be planted from one and one-half inches to two inches in depth.

As soon as the little plants appear above the ground it should be rolled if the surface is dry; when it is in such condition cultivate it with the lower surface cultivator, but if the surface is damp, use the eagle claw cultivator.

Sheds must be made before the harvest begins. One built 24 feet by 48 feet will hold 30 acres of brush as it usually requires three acres for a ton. To build a shed set posts in the ground and cover with shingles or grooved roofing. Gable the ends, but leave sides open. The strips to support the shelves should be one by three inches, nailed three inches apart; this will make the shelves six inches apart. Shelving slats are one by two.

The Galesburg and Paris seeders are mostly used and will cost about \$160 at the factory. They are pulled by traction engines or eight-horse power.

The proper time to harvest it is when it is in full bloom; if harvesting is delayed the fibre is injured and the brush retains a bad color. When the brush is in condition as stated above, break it crosswise of the row making a complete table of convenient height to the breaker; the stems should be six inches long after it is cut and laid on the table, laying off every third table for a drive table.

Two men with a dump rack on the wagon, one on each side, drive through the field and gather the brush, laying the heads on the dump outward. Then draw it to the seeder and dump on convenient ground that it may be seeded. The seeding will require about 20 minutes. After the brush is seeded it is spread on the shelves for drying. The condition of the brush governs the thickness of the layers, generally about three inches in depth. When it is well cured, which requires about ten days when the weather is favorable, it is ready to bale. By the use of a baler it is made into neat bales weighing about 300 pounds.

MANAGEMENT OF THE CORN FODDER CROP.

(By C. C. McCutcheon, Canton, Ill., at the Tazewell County Farmers' Institute.
Feb. 5 to 7, 1901.)

My first information about corn fodder was forced upon me, much as was Jonah's information about whales—valuable, if compulsory.

Some ten years ago I found myself the owner of a herd of short-horn cattle, to which I was feeding clover hay, corn, oats, and a little timothy hay and oil cake. I also found myself selling the produce of this herd below the cost of production. Like the old woman who bought eggs at three cents and sold them at two cents, it required a big business to make anything, and as I was not fixed to do a big business, my deal wouldn't scour. I couldn't sell my calves for more money, so I looked about for some way to economize. If I fed less grain, my stuff would not be in condition to sell for their full value; and I could not economize in the matter of labor, for I did the work myself—worked for nothing, and boarded myself—so I must, of necessity, look to the roughness in my feeding ration for a place to economize.

A small boy once, in bragging of the prowess of his dog, said it once chased a beaver down a hill, through the creek, up the bank, up a tree—“Hold on,” said a man, “but a beaver can't climb a tree.” “Well, but,” said the lad, “the dog was so close after him that, gosh! he just had to!” When I went to feeding fodder, bankruptcy was so close after me, gosh! I just had to! Now, I had had some such experience as a boy as you had. I had hauled fodder on a long sled, on the dry ground, cat-a-cornered of the ridges, and had gone this way, and this way. I had also, after infinite pains in loosening the top of an armful from the shock, and receiving the regulation dose of sleet down the back of my neck, started carefully and laboriously for the sled, only to find that one stalk was frozen fast in the ground, causing me to walk up on the armful and stand over on my collar-bone—just as you have done. I had also discovered that the ground was always frozen where the stalk butts were in the ground, and always thawed out and slushy where the cattle were fed. I also believed, as did my neighbors, that fodder was only fit for a balanced ration, the other ingredients of which were hazel brush and sawdust. But when some scientist wrote that 30 or 35 per cent of the value of the corn crop was in the stalk and leaves, I made up my mind that if my business was to be a financial success I must capture and utilize more of that 30 per cent than I had done up to that date. But I didn't want any more hauling bleached fodder in or out of the field after the stalk fields were gone and most of the hay fed. Now, I have experimented in various ways with corn fodder and the deductions I have made from these investigations I will briefly sum up, leaving out the tedious details, that time may be left for the gentlemen who follow me in the discussion of this subject.

I find it best in my business (I do not know how it is in yours) to plant my corn just as I would for husking in the field, cutting and binding at the proper time with one of the improved makes of corn harvesters and shocking it in shocks of about 16 by 20 hills, letting it stand just so long as is necessary for the corn to keep in the bin, and shredding it and putting it under shelter. I have found it best to plant it just as I would for husking in the field, for I never know just how much I will cut up till near the time of corn harvest, and corn planted thick, or late, for the purpose of making fodder does not make the best of corn for field husking. The time for corn cutting comes after all the other rough crops are in and one knows just what he has in the way of hay or straw on hand, and can estimate its probable value, and can tell just how good the fall pasture will be. I like to have the husks all turned and half the blades, though some young husks and blades do not ripen just as do others. Herein lies the great value of the corn binder. You can wait until the corn is just at the right stage and then cut it—this is something that can not be done by hand with the regular force on the farm, and excuse me from hiring outside men for corn cutting. The harvester does not find fault, won't go off and get drunk, and never demands a raise in wages.

I find the corn harvester will pick up down corn nicely, will not work well when ground or stalks are damp, will knock off a good deal of corn and will get just as cranky as any other piece of machinery when it wants to, and will save you just as much expense in handling the fodder crop as does the grain binder in handling the grain crop. I do not find the knocking off of the corn as a serious matter, as nearly every ear knocked off is covered with the husk and will stand an astonishing amount of rain without spoiling as it is lying on the unshaded ground; or if the entire field be shredded early the hogs can be turned in and will do the rest. I find the binders have a capacity of four to ten acres a day, according to yield, weather, temperature, etc. Two men will shock the corn nicely. I use a horse to shock on, which consists of a two by four, 12 or 14 feet long, one end resting on the ground, the other three or four feet on the legs bolted on; bore a series of holes in the scantling, get a three-eighth rod, six feet long, stick through one of the holes, stand a bundle in each of the four corners made by the rod crossing the scantling with the tops together, build about half the shock this way then pull out the rod, then the horse; finish the shock, being careful to set the butts of the bundles firmly on the ground, with the tops towards the center, tie it a foot higher than you think it ought to be, and the job is done. The best fodder I have ever had was shredded long before anyone else thought it was fit—just as soon in fact, as I consider it safe for the corn to be piled up—but be sure to have it dry.

I have never seen fodder spoil from being green, but spoil frequently when cured, from the water it contained. Of course you can let your fodder stay out till the corn is all husked, when you will have more time to attend to it. So can you have your hay out till after the oats is cut, but it is not worth much for hay afterward. Every day your fodder stays out after it is fit to shred, robs it of just so much of its nutriment and of its palatability.

Therein lies much of the value of shredding. Then there is the point of economizing space, for the shredded fodder will not, if properly mowed, occupy any more than one-third the space of the whole stalks if loose, thus making it possible for many to house their crop shredded, who would be utterly unable to do so, were it unshredded. I have found the cost from year to year to be about five dollars per acre, for a 50 bushel yield. That includes all labor connected with cutting, shocking, shredding and cribbing the corn, and will pay for the twine. An acre of such corn will considerably more than feed one mature animal six months. In fact I have been able to keep a bunch of Shorthorn cows weighing from 1,200 to 1,600 for 70 to 75 cents per month. In these estimates I have considered the corn husking equal to the value of the stalk fields. I find it the best feed for breeding cattle except clover hay I have ever used. It can be readily fed, along with other roughness, for a change of feed, as cattle do not have to be starved to it, but will consume it readily, along with other roughness. Better feed a little bran, oats, or oil-cake along with the corn and fodder.

The oil cake is particularly beneficial, as there is danger of a costive condition unless some laxative food is used. Shredded fodder is a horse feed par excellence; a horse will go farther and easier, work harder and keep in better condition than on any feed I have ever used. I usually make it a point to be sure and have enough fodder saved to feed the horses, while putting in the crop. No, of course they won't eat all of it. I don't care what the cranks and machine men tell you. If they did they would beat you out of the best bedding on earth. The discarded stubs are always dry, will absorb all the liquid manure, and the manure is always ready to spread out and plow under, so that the discarded particles are really valuable in themselves. Here is another point made in economy; the part refused for feed takes the place of straw for bedding, thus saving that expense, and it has been thoroughly demonstrated that the best results can not be obtained with any kind of stock that is stabled without abundant, suitable bedding. I have used shredded fodder almost entirely for stall feeding and think it reaches its highest point of usefulness when so fed. No two animals ought to be fed exactly alike, and when fed outside, loose, the older and stronger eat the choice particles, leaving the poorer for the weaker and more needy. Of course, this applies to all other feeds as well as fodder. I have never

weighed the yields of corn fodder as I wish I had, but I think Professor Morrow found out, at the experiment station, that the yields were from two and one-half to five tons per acre which, if correct, and my figures of \$5.00 per acre for handling the crop, bring the feed per ton down to a very low price. When you are working hard with a lot of hands at the job it seems as though it was very expensive, but when it comes to feeding a cow all winter on a little pile in the corner, it seems very much the reverse. Of course, it is not a lazy man's job—nothing about handling corn fodder is—but it is a form of economy which, if judiciously used, would bring thousands of dollars annually to central Illinois.

I am not altogether a crank on this subject; I don't advise anybody to burn up their hay machinery and plow up all their hay land; but by all means, give the fodder business a thorough trial, if you have not already done so, and draw your own conclusions.

HOW TO HANDLE AND MARKET TOMATOES AND MELONS.

(Paper read by E. R. Jinnette at Union County Farmers' Institute at the city hall in Anna, Nov. 30, 1900.)

In 1856 David Cow, now deceased, raised and shipped the first tomatoes from Union county. However, little was done at the business until after the civil war. From the close of the war until about 1890, that part of southern Illinois along the line of the Illinois Central railroad grew the early tomatoes for the Chicago market. Cobden was the center of the industry and the great shipping point. Those were the days of high prices and big profits. It is true that freight and the cost of packages came high, but the grower paid the bills and still made money.

Fast trains and refrigerator cars have practically annihilated distance. Mississippi and Tennessee growers have captured the early market and left us in the lurch. Now, Mr. President, what the growers of Union county want to know is not how to grow more tomatoes and melons, but how to prepare and market these crops after they are grown. Why is it that so little is said in our institutes, and in the agricultural press, about marketing crops and so much about growing them? It seems to me that today no greater problem confronts the growers of fruit and vegetables than that of proper handling and marketing of their crops after they are grown. Failure at this point can not be retrieved.

It is a remarkable fact that while freight and the cost of packages have steadily decreased for the last ten or fifteen years the profits of the growers of tomatoes have also decreased, and in greater ratio. Ten years ago the freight on a case of tomatoes from Anna to Chicago in a ventilated car was eight cents. Last year it cost five cents. Ten years ago, when the market went below 50 cents a case, the most of the growers quit shipping. Now they are mighty lucky to get 50 cents a case, and they do not stop shipping when the price drops to 15 and 20 cents.

This decrease in the cost of transportation has been secured through better organization and management of shipping associations. At first glance one would say that the decrease in the grower's profits is the natural result of increased production. But this is not true, except it may be in the years when there are large crops in all the competing producing sections. I think it can be shown that one cause of this decrease is due to a lack of systematic distribution. Everything is dumped into Chicago regardless of the needs of that market. When South Water street is glutted and the market demoralized, then perhaps a feeble and spasmodic effort is made to find a market elsewhere.

For several years the directors of the Anna Shipping association have made special efforts to induce the shippers to begin at the first of the season and send at least a part of their shipments to outside markets. Every season responsible firms are selected in the leading markets outside of Chicago to handle the consignments. To be profitable shipments to these markets must be made in carload lots. For several years an extra man was hired to devote

all his time to this outside business. But little is ever done at it until the Chicago market goes to pieces, and then it is usually too late. But suppose Cleveland or Detroit wires us to send a car of tomatoes or melons, and we do it. How do we know that Villa Ridge, Cobden, Alto Pass, or one or more points in Tennessee have not shipped cars to arrive the same day ours does? In that event the market is overloaded, prices drop and the grower gets nothing for his goods. It does seem that some way can be devised to prevent these disastrous gluts. Intelligent and hearty coöperation will do it.

Another cause of decreased profits is the shipment of green, immature and worthless stock. Year after year the market for tomatoes and melons is demoralized by this abominable practice. Formerly buyers on South Water street inquired for Anna stock. Now I am told they fight shy of it. You are all familiar with the story of the man who killed the goose that laid the golden egg. Well, that's just what too many of the melon and tomato growers hereabouts are doing. And the queer thing about it all is that they can not be made to see it. What can be done with a man who openly boasts that he picked green, knotty tomatoes and got 50 cents a crate for them, while his honest and conscientious neighbor waited until his were ripe and then shipped only sound fruit and received from 20 to 30 cents for it? This is just what happens every season. The fact is, that this corrupt practice is rapidly demoralizing the business, and unless there is a change seen it is only a question of time until upright growers will be forced to quit.

I am quite well aware that all this talk is a good deal like the preacher's sermon on the desecration of the Sabbath. The fellows he wants to reach are not there. They are off on a Sunday excursion or attending a Sunday baseball game. The growers who ship green, knotty tomatoes and slick yellow melons do not attend farmers' institutes nor read agricultural papers. They do not have to; they know enough without.

When one looks about Union county and sees what fruit growing and trucking have done for the tillers of the soil it makes him angry to think that these industries are endangered by the greed and shortsightedness of the men engaged in them and who have prospered by them. How like they are to the "man who killed the goose that laid the golden egg." How these same fellows spout about the dishonest commission man and how they howl when some commission man has the nerve to send them back a really just price for their worthless stuff.

I know of but one way to reach them, and that is through their pockets. Make them see that honesty is the best policy, even in packing and shipping tomatoes and melons; that it does not pay to ship tomatoes before they have fairly shed the bloom, and that it does pay to feed cull tomatoes and slick yellow melons to the hogs. How this is to be done is another question. This whole matter has been discussed again and again by the directors of the Anna association. At a recent meeting of the board a committee was appointed to take up the matter and see what could be done. This committee has in mind a scheme that may effect the desired results.

The plan, in brief, is for enough growers who are careful, honest packers to combine and load cars with first class stock. When loaded, these cars are to be turned over to the manager of the association to be sold on track or shipped on consignment as his judgment may warrant. In either case the stock is guaranteed. Each grower will be required to put his name on all his packages. Then if, at any time, there is any complaint about the quality of the stock by the buyer or consignee of a car the fraud can be traced to the guilty party. The details have not yet been worked out, but the committee is confident the plan is feasible and that it can be made successful in time. But you ask, how will this make the dishonest grower see the error of his way and cause him to change his bad habits. I will tell you. This shipper of green tomatoes and slick melons is an inquisitive fellow. He is always trying to find out what the other growers are getting for their stuff. He is afraid some neighbor is getting more for his tomatoes than he does. Nothing makes him more miserable than to find that this is the case. Now when he finds out that the growers in the combine are getting twice as much for their goods as he is for his, he will see the point—or rather the dollar—mighty quick, and will almost break his neck to get into the band wagon.

RENT.

(A paper read by Henry Wallace, editor of Wallace's Farmer, Des Moines, Iowa, at various Illinois Farmers' Institutes, 1900-01.)

I have many things to say to you to-night, but will group them all around the short word "rent." Not the rent of houses, nor stores, nor pianos, but the rent, or price given and received for the use of land—improved farming land—for a definite period.

I am quite sure of the attention of two classes in this community; the men who are in the habit of receiving rent, that is, the landlords, and with whom the certainty of receiving it without pressure or suit is often one of the problems of the year, and the tenants, on the proceeds of whose year's labor rent is a first charge—a preferred claim. Both these classes are increasing in numbers every year and will continue to increase, whether we believe it to be for the good of the country or the State or not.

None the less is the farmer who tills his own soil interested in rent, for the value of his land, whether he hold it or sell it or leave it to his children, is determined largely by its rental value. In some countries, for example, the price of land in the settlement of estates is determined solely by its rental value, so many years' purchase or rent determining the price which the tenant must pay the owner of the fee if he would own the land.

No man is, or at least should be, more deeply interested in the value of land than the citizen of the village or city in a purely agricultural district, or in any district so far as it is dependent on agriculture. The only reason for the existence of the great majority of the towns and smaller cities of this State is to supply the wants of the farmers in the region tributary thereto. Where there are no mines, no factories, no great educational institutions, where the country is purely agricultural, the growth and prosperity of the town or city and the happiness of its inhabitants are in direct proportion to the prosperity of the farmers in the country tributary.

The rental value of the land is the best measure of agricultural prosperity; not the rack rent, or the rent paid in part out of former earnings, but the true rental value. The farmer is a heavy buyer and a heavy seller also. When he begins to retrench the country over, it is time for every business man to prepare for a panic. The ultimate market for the bulk of farm products is generally hundreds or thousands of miles away, as are also the factories which produce the goods he requires. The railroad, the wholesaler, and the local dealer are all but parts of the machinery of distribution by which the products of the factory are loaded in his wagon and his products laid at the door of the consumer. The higher the rental value of his land, the more money the landlord will have to spend; the larger the employment of labor on the farms, and the greater the wants of the farmer, the greater will be the prosperity of the cities and towns to which he is tributary.

Tenants will not long continue to pay high rent, unless renting is profitable, and hence in a broad, rough way, the rental value of the lands tributary to the town or city is a measure of its prosperity and determines the value of every house, store, and lot; determining whether there is prosperity on the streets and happiness in the homes, or whether dog fennel shall grow on the highways and the drummers will vote it a dead town, with Dun and Bradstreet telling the tale of woe the world around.

If the farmers were to withhold their deposits for one week from the town banks, there would be a local panic, forced collection of all paper as soon as due, and the banker would have "no money to lend" if, indeed, the bank would not have to depend on outside help to keep it out of bankruptcy. The farmer can live without the town, if he has to do so; the town can not live without the farmer. Increase the fertility of the farm and the skill of the farmer, and the town decks herself "as a bride adorned for her husband." Decrease either or both and the town puts on widow's weeds. On these two things—the fertility of the land tributary and the skill of those who farm it—depends the real value of every vacant lot, every business block, and every home in the agricultural town.

I have dealt quite fully on this point because townsmen do not always see the true reason for the existence of the town and the close relation there is and always must be between the prosperity of the farmer and the townsman. Hence, the townsman is as vitally interested in rent as are the men who receive it, or the men who pay it, or the farmer, who, farming his own land, pays to himself its rental value.

There are many elements in the rental value of land. We can easily think of land that has no rental value, or, indeed, any value whatever; land, for example, in a rainless country or in a country of insufficient rainfall, or of insufficient heat, or at such a distance from market that the freight rates would equal the value of the crop, or where there is no stable government, or a government so entirely under the control of monopolies that the profits of the farm could be milked into the corporation bucket as regularly, and far more easily than he milks his cows; hence, climate, rainfall, the distance from market, freight rates, good or bad government, good or bad society, good or bad roads, educational or religious advantages, as well as the level of prices, all these, have much to do with the rental value of land.

As this is an old settled country, with railroads located, the agricultural value of the land assured, and society established, we may for the purpose of the present discussion dismiss all these and confine our attention to the two main factors which in this State and adjoining states enter into the rental value. The first and least of these is the fertility of the land; the second and greatest is the skill and integrity of the tenant. Increase the fertility of the land and the skill and integrity of the tenant, and you increase the rental value of the land, increase the prosperity of the landlord and the tenant, increase the value of every acre of land, and increase in the same proportion the prosperity of every city and the happiness of every citizen down to the smallest child.

I would like you to think over these two points very carefully, for if I can not interest you in these you may as well go home. Your climate will not change, neither will your rainfall. Your country will not go to the bow-wows even though the politicians never fail to tell you so every fourth year, in case their candidate for President should not be elected. The future construction of railroads, every improvement, in roadbeds and equipment, or the opening up of new routes to the seaboard, will in time cheapen freights and thus increase rental value, but the main changes will come in the fertility of your land and the skill and integrity of those who farm it, whether they be landlords or tenants.

If, however, we would increase the rental value of our lands, either by increasing their fertility or the skill of the renter, we should first get a clear idea of the nature of farming operations. We have been told time out of mind that the farm is a bank, the farmer the depositor, and that unless he deposits as much as he draws out, the bank will soon refuse to honor his drafts and the farmer must become a bankrupt. The illustration is not to the point, nor in any way near it. No farmer, unless he be a heavy buyer of feeding stuffs or commercial fertilizers, ever deposits in his farm anything like as much as he draws out. Let him feed all he grows, put a roof over his manure shed, and haul out the manure as regularly and conscientiously as he says his prayers or votes his party ticket, he never puts back as much as he draws out of the farm. He ships out potash, phosphoric acid, and nitrogen in the form of beef, pork, butter and milk. There is always, let him do what he will, waste in his manure pile. Every farm must give the farmer more than he puts back or the farmer will go bankrupt. If you will think five minutes, you will see that this is so.

In one sense the farm is a bank, but in its truest sense it is a factory, of which the raw material is the rain, the sunshine, the electric current, and the potash and phosphoric acid in the rock elements of the soil. These are all the gifts of God, given or withheld in such measure as suits Infinite Wisdom. The Lord has been using this factory for thousands of years to create food for the wild beasts and creeping things and the fowls of the air, and He has turned it over to you to continue His operations and create food for the

hungry nations. You have erected buildings for your family and your live stock, have fenced the farm off from other farms, have opened it up with the plow, and whether you propose to run the farm yourself or rent it to a tenant, you would do well to notice the suggestions which the Lord has given you in His practice as to how to run it to the best advantage, and thus learn more about farming than all the professors, all the books, and all the agricultural papers and institute lectures in the world can tell you. At most, they can only point out the Divine method.

If you observe closely, you will notice that in addition to the actual mineral fertility in the rock, He keeps on hand constantly an amount of available fertility in the shape of potash and phosphoric acid which he has weathered out of the rocks by means of water, frost, heat and the acids of plant roots. This is His stock in hand. He keeps also on hand, after the manner of the thrifty housewife who always has yeast in store, a large amount of partially decomposed vegetable matter, which we call humus. The uses of this are manifold; it is a storage basin for water, soaking it up like myriads of little sponges in a wet time, and giving it out slowly to the plants in a dry time. It is a reservoir of nitrogen, without which not a muscle or a drop of blood of man or beast can be formed. It is also a divisor to keep the rock particles, constituting by far the major portion of the soil, apart, and thus facilitate the growth and development of plant roots, and it also stores up heat for the use of the plants. In His farming operations, the Lord always keeps a stock of humus on hand, manufacturing it from dead grass on the prairies, falling leaves in the forest, and the decay of roots in both. The more of these elements on hand in due proportion, the greater the capacity of the farm factory, and the greater its rental value.

If you are complaining of impoverished land, of land that washes in a wet time and bakes in a dry time, that will not grow clover as it used to do, know of a surety that you have departed from the right farming ways of the Lord of the Harvest, and that the land will sooner or later spew you out as the holy land did the Canaanites in Joshua's day, and the Israelites themselves in Ezekiel's day, and as this fair land has been spewing out the soil robber for years and driving him to Nebraska and Kansas.

The farm is a factory. The farmer operates it, and the capacity of the factory and the skill of the farmer together determine its rental value. The raw material in the shape of potash and phosphoric acid is abundant in all drift soils, the materials of which have been carried by glacial action from regions far distant, and blended together in a large way that we are even now just beginning to comprehend. The chemist can find enough in almost any soil for a hundred crops of wheat of thirty bushels to the acre, but little of it is immediately available, and it becomes available only by nature's slow processes. It is locked up in the rock as an endowment for future generations. The sunshine and the rainfall come as the Lord wills. There is always enough for a fair crop with a good farmer, generally enough for a good crop, and sometimes enough for a bumper crop. The world never has twelve months' food ahead. It never falls short where there are proper methods of distribution. No man can get a corner on the world's crops because he can not get a corner on the rain and sunshine. The capacity of the factory can be increased gradually from year to year, and likewise the skill of the operator. These determine the rental value of the farm factory.

Let me tell you, sinners that many of you are, how you have departed from the right ways of the Lord. When I first knew Illinois, new corn was selling at Monmouth for eight cents per bushel; old corn for ten. The rats held high carnival in the streets on moonlight nights, or scampered in platoons and regiments under the wooden sidewalks. The State was a great corn field from the Mississippi to Indiana and from Chicago to Cairo. You then believed that your land was inexhaustible. From year to year you turned the humus into golden grain and thus used up the working stock of the farm factory, and then began to complain, like the manufacturer who uses up his stock on hand and then shuts down. You found this would not do. You seeded the land to grass, grew live stock, got rich, moved to town and rented your land to the foreigner to do just as you had done before, use up the stock on hand. You got out of him all the rent you could, and now you ask

me to tell you how you are to get more rent and to teach him how to make bricks without straw. I am not here to show you how to work miracles, but to point you to the methods of the Great Farmer of farmers, and suggest that you increase the capacity of your lands by following His methods, one of which is a rotation of crops in which the grasses, including the legumes, have a prominent place. You must be particular in giving the clovers a place in this rotation, for you have in their root development a factory both of humus and nitrogen. If you can not grow one clover, grow another.

If you have so far impoverished your land of its stock of fertility that you can not grow any of the clovers, then sow cow peas, plow them under, and follow with clover. You absolutely must have some kind of legume which can utilize through the tubercles on its roots the free nitrogen of the atmosphere. The clovers and grasses will furnish you with pasture and winter forage and you must have stock to consume these. This means that on your farm factory you must establish a meat factory and use your farm products as raw material with which to run this factory and use its waste product of manure to keep up your stock of humus, thus increasing the fertility of your land; or, in other words, the capacity of your factory.

I know some of you landlords will not endorse this proposition. It is not convenient for you to find a tenant who knows how to handle stock, nor yet is it convenient to advance money to stock it up in case the tenant does not have enough of his own. You want a farm from which you can clip off rent as a banker clips coupons from a government bond or iron-clad mortgage. I confess I would like that kind of a farm myself, and might possibly find it in some other world, but certainly not in this.

Have it your own way, however, but first read the history of agriculture. You need not go abroad. Read the history of the agriculture of New England, of New York, of Pennsylvania, of Ohio, of some parts of Indiana. You need not go so far afield as that. Look up the history of the farms in your own State which once grew great crops of corn and clover and now grow largely weeds, for the reason that weeds can live where grain can not. The good Lord is long-suffering with all sinners, but sooner or later your sins will find you out. You can not maintain, much less increase, the rental value of these farm factories without a legume in the rotation and without live stock. I do not say in what kind of live stock farming you should engage, whether cattle growing, sheep growing, or dairying, but sooner or later you will have to come to it or do worse; that is, see your lands decrease in fertility, your tenants impoverished, agriculture dishonored, and your towns and villages languished, filled with dyspeptic, discontented, pessimistic people, and your State itself lose its proud position of the home of a sturdy, industrious, level-headed and patriotic people.

The increase of the capacity of the farm factory is not all of the rent question. It is, in fact, the smallest part of it. You must also increase the ability and integrity of your tenants. If you were to offer to rent me a rolling mill, a flour mill, a store, a bank, a piano, I could not afford to pay you much rent, no matter how valuable the property might be, for the simple reason that I could not make the rent out of it until I had learned how to run it. If you offered to rent me a partisan paper, I could not afford to give you five cents on the dollar, but if you were to offer me an agricultural paper I might talk to you, if I were out of a job, provided you proposed to rent it for a term of years; not otherwise. Given a field for any business, it is the man that makes the paper, the factory, the bank, the business of any kind, and the greater the ability of the man, the more rent he can afford to pay, and will pay.

The fair fields of this State are not crying so loudly for an increase of fertility or productive capacity as they are for the right kind of tenants, and the right kind of tenants will not appear until the right kind of landlords put in their appearance. The hopelessly incapable tenants, the fellows who thought they were divinely ordained soil robbers, born to use up the stored fertility of the land, have, for the most part, gone west, looking now happily in vain for new soils to rob. The landlords who think they are divinely ordained

soil coupon clippers and treaders on necks would do well to follow them before they are compelled to do so. The landlord who wishes large rentals in the future must be a student of agriculture, as must also his tenant. Agriculture has always flourished where the landlords take an active interest in it. It has always declined whenever they ceased to do so. When the Irish landlord went to England and instructed his agent to get all the rent he could, Irish agriculture began to decline and was saved from extinction only by the iron hand of the law which by means of land courts gave the tenant a living chance. The coöperation of landlord and tenant made English agriculture in the eighteenth century the most perfect in the world. Since the landlords have moved to the city and engaged in other lines of business, the furrows of England complain, and a depressed condition of agriculture is the normal condition in the island. The French revolution was the answer of an outraged tenantry against the oppression of landlords.

Whenever landlordism has come in, there has always been, is now, and, so long as human nature continues as it is, will always be a disposition to collect rack-rents for the simple reason that the opportunity is always present, and the more highly developed the country the greater the opportunity. I will try to make this proposition very plain. There is a radical difference between the rent of farm land and that of any other kind of property. If you lease a store building or a factory to a tenant, he can take out of it at the expiration of the lease all he puts into it, but no more. He will, if he has any sense at all, not put into it anything that he has not the right and ability to take out. If the owner asks too much rental, the tenant can buy a lot in the same town and put up a building of his own, or rent another, for stores are being built all the while and there is no limit to their increase. High rents always mean an increase in the number of buildings to rent, and when a town has one more building for rent than there are tenants, the price of store rentals falls at once, and thus rack-renting of stores and factories can not long exist.

It is quite otherwise with farm lands. There is no possibility when a State is fully settled up, as this is, of an increase in the acreage of farms. That acreage is definitely fixed. There is no spot left on which to locate another farm. The tenant must pay the rent demanded by the landlords or get out of the country. The desirable agricultural land in the United States has about all been taken up, and there are now more renters than farms to rent, and every farmer bankrupted by rack-rents adds one more to the number of men seeking farms. The tenant can not if he would, if he be a good tenant, take out of the farm at any given time all that he has put into it. If he has hauled out manure, it will take five years to get back its full value; if he turns under the clover sod, it will take him three years. On the other hand, the poor tenant always takes out more than he has put in. He can sell and does sell the landlord's property by piece meal, taking out all he can and putting nothing back. If he feels that he is rack-rented, he will do it every time and justify himself on the ground that it requires not merely the year's crop but part of the land itself to make him whole.

Let us, bearing these distinctions in mind, imagine a concrete case and see how rack-rent comes in in any long settled country like this. I do not know what is the fair rent of land in this county, but for illustration we will say \$600 per quarter section. We can imagine an average farm leased to a good tenant for a term of years for that price. He has kept up the multitudinous repairs on the farm, has gathered stock about him, fed the principal part of the grain and forage of the farm, and hauled out the manure. The lease has expired and he would like to renew it for another term of years at a fair rate. A soil robber, with a family of husky boys, comes along, looks it over, goes to the landlord and offers \$800 per year for the quarter. The landlord is delighted and concludes that prosperity has visited the land for sure, and that the lines have fallen to him in pleasant places, and that he has, indeed, a goodly heritage, but don't like to part with the old tenant, whom we will call Jones. However, he tells Jones of the offer and regrets that his duty to his family and himself requires him to accept it. He says a whole lot of nice things about Mr. Jones. Mrs. Jones and the little Joneses, would rent to him cheaper than any one else, and "being as its you I will renew the lease for

\$750." Mr. Jones talks it over with Mrs. Jones, and the Joneses in general, and finally concludes that he will lose in the breaking up of his plans and otherwise at least \$200, perhaps \$400, and concludes that he will pay the higher rent, work a little harder, and trust to good times and better luck. The word goes out that Smith, the landlord, has rented Jones his quarter for \$750, and every landlord at once puts up the price and figures with great satisfaction that a quarter which will rent for \$150 more than formerly is worth at least \$2,000 more in actual value.

But if Smith, the landlord, has had some pleasant sensations and counts himself richer, Jones, the tenant, has had sensations of a different character. He feels that Smith has taken advantage of his necessities, of the fact that he can not move without serious loss. His attitude gradually becomes quite different. He now regards his lease as rack-rent and permission to get out of the land all he can. He suspects, in fact knows, that at the end of this lease a similar advantage will be taken, that the screws will be turned once more, and his rent advanced as nearly as possible to the point that will make him let go without quite driving him away. Smith, the landlord, has got it out of him, and Jones, the tenant, will get it out of the land if he possibly can. In your hearts, landlords, do you blame him? I certainly do not. If you have granted him for a good price the right to a pound of flesh, why should he not take it, though it takes the very life out of your land? Substantially, this is the history of rack-rents in every agricultural country in the world after that country has once been fully occupied.

What follows next? Impoverished land, impoverished tenants, impoverished landlords, a bitter feeling between landlords and tenants, a lower grade of tenants, until farming ceases to be respectable, and the farm boy, disgusted with his father's calling, and embittered against landlords as a class, flees for refuge to the city with all its allurements and temptations. The whole country puts on mourning in the shape of unpainted houses, dilapidated barns and fences, no live stock except the tired farm horse, the family cow and a few hogs, and it is abandoned as an inhospitable country, fit only for the man with the hoe.

If the landlord expects to enjoy permanent prosperity he must give the tenant a fair show and must not take advantage of the fact that the good tenant can not possibly take away all that he has put on the land; in other words, that he can not move without great loss. Long ages before it was inscribed in holy writ, it was written in the constitution of this world: "Your sins will find you out;" "The way of the transgressor is hard;" "Though hand join in hand, the wicked shall not go unpunished." If the land mourns by buildings falling into decay, by scant crops, by the clay spots appearing on the hillsides, know of a surety that the words of the ancient prophet are fulfilled: "The land mourneth for the wickedness of them that dwell therein." Give the tenant a chance; exact fair rents, not rack-rents.

This, however, is not all. You must not only give the tenant a fair chance in order to furnish him a motive for doing his best work, but you must work with him; work with him, I say, not by putting your hand to the plow, but by helping him with that headwork, without which mere handwork is the drudgery of the slave. You can not increase his efficiency and with it his ability to pay higher and still higher rents with greater profits to himself and to the landlord beyond the extent to which you enable him to put brains into his work by persuading him to become a close observer and a student of agriculture.

Again, there is a disposition on the part of many tenants to suspect that because they are tenants they are regarded by the landlord as only a tenant; that is, that the station in life of the tenant is below that of the landlord, a notion which, I suppose, like so many other false notions, should be labeled "imported," and imported from countries where such class distinctions actually exist. A suspicion of this kind should not be tolerated for a moment. The tenant may be, and often is, greatly inferior to the landlord in intelligence, integrity and executive ability, and again the reverse may be, and often is, the case. Such a suspicion is not tolerated for a moment in the city where many of the larger enterprises are carried on in rented property, and

a large per cent of the well-to-do live in rented houses. It is not wealth that makes the man. "Worth makes the man, and want of it—the fellow," and the sooner that both landlords and tenants realize that the man is neither socially the better or worse for being either landlord or tenant, the sooner one of the difficulties of making the farm pay higher and still higher rent will be removed.

Charge the tenant a fair rent for a short term, with the assurance that it will be extended from time to time at fair rates as long as the relation is satisfactory to both parties. Give the assurance, not by word but by act, that the tenant is not regarded as a mere hewer of wood and drawer of water, a servant to do the landlord's bidding, and the way is open for his education in agricultural lines, without which no permanent advance in rents proportionate to the selling value is possible.

The first step in the self-education of the tenant is a subscription to a first-class agricultural paper. By a first-class agricultural paper I mean a paper edited by a student of agriculture and published for the advancement of agriculture; so published if for no other reason than as the surest way to financial success. I do not mean a paper merely filled with agricultural reading and published mainly for the purpose of securing advertisements on the basis of postage paid, or alleged circulation. It is often a calamity for a farmer to be inflicted with a paper of this latter class. He not only wastes his time in reading it, but his practical sense teaches him that it is not safe to follow its advice. A few first-class papers are now to be had, and their number and quality will increase with the coming years. It is an old maxim that "the best is the cheapest," but there is really no comparison between these two classes of papers. For an earnest student of agriculture, particularly so if he is engaged in agriculture himself, you may always expect something of value. If you read him rightly, he will never mislead you. He deals with facts and principles and shows you how they should be applied under varying conditions, and, therefore, quite apart from the direct value of the paper in farming lines, it is a mental stimulant, a thought breeder, the precise thing the farmer needs, and needs it most in the busiest season when work is most pressing, for work without thought is drudgery, the burden of the slave. The advertisements in such a paper will not mislead you, for nothing is ever accepted that will not be educational in its character and advantageous in its purchase to at least some large class of its readers. I have little hope for a farmer, be he tenant or landlord, who will not pay a dollar a year for a first-class agricultural paper, giving him, as it does, in addition to its well prepared reading matter and carefully selected advertisements, the privilege of asking questions for public or private answer on any subject that interests farmers in general.

Subscription to a paper of this class is a recognition that in the opinion of the subscriber modern farming is not a mere matter of brute force, of hard knocks, of pure strength and awkwardness. It shows that the man has cut loose from the tradition of, "father did so and so," and realizes that the really effective work of farming is a good mixture of brain work and hand work, the brain guiding the hand.

If the farmer has reached the point of subscribing and paying in advance for a first class agricultural paper as above described, and reads it carefully, he will soon be ready for a more or less distinctive breeder's paper in the line of his particular work, whether it be horses, cattle, sheep or hogs, and if he reads that carefully he is ready for the bulletins of the experiment station and for books on agriculture and live stock breeding, to the numbers of which now available, each year adds more and more. It is not difficult to get the farmer who is thus awakened and has an appetite for agricultural knowledge—"know how"—to attend an institute where he comes in personal touch with other farmers of like development; in touch, also, with the landlords whose eyes are open and he begins to absorb the enthusiasm which characterizes all really first class farmers, whether they live on the farm or have their investments in agricultural enterprises. He realizes the truth of the lamentation of the old prophet: "My people are destroyed for lack of knowledge." He is lifted out of the rut and begins to see something of the

grandeur and glory as well as the difficulties and disappointments of that business which more directly than any other deals with the great forces of nature. He magnifies his office and regards himself as no longer a drudge—a "man with a hoe"—but a co-worker with God himself in feeding the hungry and clothing the naked nations. He does not regard himself as an Ishmaelite, his hand against every man, and every man's hand against him, but a man amongst men, with the respect and confidence of every other man who believes in good farming, clear thinking and right living. He sees the great possibilities in farming; sees, if he is a tenant, that his real interests are identical with those of his landlord, that they are in fact, if not in name, partners, and are making the farm increasingly profitable to both.

He sees, whether he be tenant or owner, where it is possible to stop the terrific waste going on every year through lack of knowledge of the capacities of the farm or of the mighty forces with which he is operating. He becomes, instead of a drudge, the manager of the farm factory and with his skill in management will give the owner of the factory a larger income or rent whether he works it on the shares or rents it for cash, and his increased ability will justify him in paying a higher rent.

In this day and age of the world, it is not the pure brain worker that commands the highest wages, much less the man who has nothing else but his strength to sell in the market, but the man who combines brain work with hand work, who understands man and things, and has the capacity to bring things to pass. The world over, the more intelligent the worker, the higher average price he receives. The man who has the "know-how" does not compete with the machine; he guides it. The man who has not the "know-how," no matter what physical strength he may have, is the man fore-ordained by present conditions to scratch a poor man's head as long as he lives.

The more thoroughly I study this subject of rent, the relations of landlord and tenant, the necessity both of increasing the fertility of the soil and the ability of the man who tills it, the more overwhelming its importance becomes. It is not merely a matter of dollars and cents, not a mere question of economics; it is vitally related to the welfare of our country at large, a matter of patriotism as well as dollars. For as this civilization moves onward in the pathway of its manifest destiny, the proportion of farmers to the total population will certainly continue to decline. Cities, with their corrupt governments, will increase in the population even more rapidly than in the past. The only thing that will preserve civil liberty in the city is the influx from the farms and the towns where the farm sentiment molds public life.

The farm is the breeding place of men as well as of live stock, and if we send to the cities ill-bred boys and girls, with low intelligence, mere drudges, embittered by a sense of wrong, we but add to the pessimism and discontent which even now is the greatest menace both to the city and to the Republic. If, on the other hand, our farmers, whether landlords or tenants, cherish the exalted ideals of our forefathers, if the spirit of the country home, the country church, and the rural school is preserved and intensified, we not only pour life-giving streams into the great marts of trade, but we develop on the farm that exalted character which fits the farmer to act as umpire between the ever warring forces of labor and capital, an umpire, who, combining in himself both the capitalist and the laborer, can like the days-man that Job longed for, lay his hand upon both.

If this nation is to fulfill its glorious mission among the nations of the earth, it must rear on its farms a race of broadbrowed, clear thinking men, the stay of the nation in time of peace; its strength in time of war; a race more invincible than Cromwell's ironsides, mightier by far than Caesar's legions; a class of men who can hold the balance true when other classes lose their heads.

We are now near the parting of the ways. It is possible for these great states of the middle west to be not only the granary of the nations, but by reason of their thrift, intelligence, and patriotism, and their ability to take broad views of all public questions, to be the arbiter of the destiny of this

nation. And again, it is possible for these soils, teeming with the stored wealth of ages on ages, to become so impoverished by bad farming that they will give a scant and grudging return to the unintelligent toil of men who will naturally be regarded by other classes as mere "hewers of wood and drawers of water," fair game for every adventurer and the prey of every plunderer. Whether the one or the other, whether these broad prairies shall flourish as the garden of the Lord, or whether in due time they will be abandoned by their owners and tenants, as other lands have been, depends largely on the requisites of the customary rent.

GARDEN DEPARTMENT.

THE FARMER'S FRUIT AND VEGETABLE GARDEN.

[Read at the Jasper County Farmers' Institute Dec. 14, 1900, by Mrs. S. Rose Carr.]

Farmers do not live up to their opportunities. Our wisest physicians are now looking more to the cause and prevention of disease than to its cure. A few years ago, on the arrival of a physician at the bedside of a patient, the first thing was an inquiry in regard to the seat of pain. The next was, "Let me see your tongue." Now when the symptoms are examined into, the up to date M. D. seldom asks to see the tongue of his patient, but instead he propounds the inquiry, "What do you eat?"

I sometimes think one-half of the diseases of the world are caused by bad sanitation, and nearly all the other half by unsuitable food, improperly cooked, and eaten in an unreasonable manner, or at unfavorable times.

We farmers, as a rule, do not place a proper value on the luxuries that are to be had, almost without cost, by any farmer. The farmer may, and some do, have corn, pork, beef, mutton, potatoes and bread, from the fields and barnyards; but the real luxuries come not from the broad acres, but from the acre—or less, perhaps—from which we obtain the strawberries, gooseberries, raspberries, blackberries and currants, the pears, plums, peaches and grapes, the asparagus, lettuce, beans, peas, cauliflower and celery—not to mention the pumpkin, which furnishes an excellent substitute for apple sauce, the material for a favorite Thanksgiving pie, and which Whittier immortalized in verse—and many other delicate things that not only pay, but give health and pleasure to the family.

Compare the condition of the farmer with the condition of those who live in the cities, as regards the luxuries just named. Look at the quarts, so called, of poor strawberries, ripe and unripe, jammed together in wooden boxes, hauled in the boiling sun for miles perhaps, or possibly shipped 300 miles or more, and when they reach the table of the one who is sufficiently fruit hungry to pay his 15 or 25 cents for them; they bear but little resemblance to the large, luscious fruit almost too much for a mouthful, perfect in form and color, delicious in aroma, picked in the dewy coolness of the early morning, placed at once in a cool place, there to remain until served at meals with a rich golden cream not to be obtained in the cities, whose inhabitants receive their quarts of milk and water, if nothing worse, doled out to them every morning, and as they gaze on its azure surface they think of the country, where the atmosphere is perfumed by the odors from a thousand flowers, where the meadows, groves and lanes are redolent with health, and they sigh for the fresh fruits and vegetables eaten in the country when visiting some "country cousin." This is a digression, however, and I will return to that little piece of ground, carefully planted and well cared for, that makes all the difference in the world between very luxurious and very ordinary living.

Professor Henry Augustine said to farmers at the Jasper county institute, that we people of southern Illinois have the best soil on earth for the successful growing of fruit, and the county should be one vast orchard and berry patch. He also said the reason so many farmers fail in their efforts to grow

fruits, is because they do not plant the kinds best adapted to their locality. Many people are not aware of the fact, that the State Horticultural society has numerous experiment stations broadly scattered over the entire State. The State is divided into sections, northern, central and southern. There are five experiment stations in the southern section, which is our own, located as follows; Centralia, Alton, Cobden, Odin, Olney.

All varieties of fruits are tested at these stations, reported upon, and the report published in the annual Horticultural report. L. R. Bryant of Princeton, is secretary of this society, and will send fifty copies of the annual report for free distribution among the members of county institutes. The only cost will be freight charges, a very small matter.

After a study of varieties and a decision reached as to what to plant, the next step is to decide where to purchase. If you have a home nursery, patronize it by all means, if your nurseryman has what you require. If you have no nearby nursery procure your stock from a reliable firm as near you as possible, since the stock will not be out of the ground so long in that case, and your chances are greater for successful transplanting.

Above all, do not buy from an agent who represents an obscure firm a long way off, because it is most discouraging, after paying a big price, (perhaps double their cost from a reliable firm) planting them, carefully tending them for years in some cases, to have them turn out to be some other variety than that you expected.

For instance, a neighbor of mine bought eight Ben Davis apple trees, but after six years he found the trees planted ripened their fruit in July, and were good for nothing at that. He also bought white grapes which turned out to be Concord, of which variety he had an abundant supply, and his Shaffer's Colossal raspberries were black. There are other instances I might relate, but time forbids.

In many cases one can get good varieties of small fruits from a neighbor giving in exchange some other kind or variety. Many woody shrubs grow readily from cuttings—notably the quince, currant and grape. Place the cuttings on the north side of a fence or building, and water once or twice during the summer and very few will fail to grow. All small fruits should be planted in long rows (I say nothing of the ground, for one must use the kind he has), kept free from weeds, and well cultivated year after year. Strawberries should be mulched, not because they ever winter kill, for they do not, but to keep them from blooming too early in the spring, and to keep the runners in check.

Perfectly ripe fruit is as a rule more desirable eaten raw, but if immature they require cooking. Stewing or baking are the simplest as well as the most healthful methods of cooking, and all fruits admit of one of these methods. Granite or porcelain vessels should be used for cooking fruit, because if cooked in tin the fruit loses much of its flavor, and if the tin is of poor quality there is danger that the acid of the fruit acting on the metal will produce a poisonous compound.

In growing vegetables, plant everything in long rows, so that most of the cultivation may be done with a hoe. By this method the women of the farm may do all the work needed with a hoe, and be all the healthier for the exercise. A half hour each day will care for a large garden.

Economy is only another name for wealth, it is said, and the true economist is one who knows how and when to buy to advantage. This is especially true of seeds because of the loss of time and consequent dearth of table luxuries involved in the sowing of bad seeds; and for this reason vegetable seeds should be chosen with careful consideration. A day may be most profitably spent in looking over the garden catalogues which are sent out early in the year, making a selection from them and placing an order with the seedsman for those things you are not already supplied with. Let some one else experiment with most of the novelties.

Do not continue to buy your celery at one dollar a bottle, for you can get a better tasting and just as effective a "compound" as "Paine's," at less cost and very little trouble. We grow all the celery we want by just sowing the

seed, in rows, exactly as we do peas and lettuce. We keep this plant free from weeds, and in the fall we wrap these plants in paper and throw sufficient earth around the base of the plant to hold the paper in place. No transplanting, no trenching, no hilling up with earth, but plenty of celery to use all winter by taking the plants up late in the fall, and putting the roots in a few inches of soil placed in a box in the cellar.

A friend from the city once complimented me on an oyster soup, and thought it must be the better quality of milk to be had in the country. His surprise may be imagined when I showed him the "oysters" growing in my garden. The Mammoth Sandwich Island is the largest variety of oyster plant and is just as good as the small kind.

Cauliflower is another vegetable that merits more attention than it receives at the hands of the farmer. An early variety planted where it may remain (not transplanted) and protected by coal oil emulsion or pyrethrum powder from the green cabbage worm, usually rewards our care by heads six inches across. It is richer and more tender than cabbage and makes excellent pickles.

Onions are easily grown, but the average farmer sells most of the onions raised to the better posted city epicures, and buys his nervine from his family physician in tablets.

This paper is already of sufficient length perhaps, but I can not refrain from adding words as to the medicinal value of vegetables. Onions rank high as a nervine, are stimulating to the system, an excellent blood purifier and a remedy for sleeplessness; celeriac, or turnip rooted celery, is said to be most beneficial to persons afflicted with rheumatism; tomatoes contain calomel, and the opium of commerce is procured from lettuce; pieplant is almost a specific for kidney disease, and asparagus is useful as a diuretic.

It is said that the system requires that two-thirds of all the food that daily enters the stomach should be water, and nature has provided us with the purest form of distilled water in the juices of fruits and vegetables, which have an added value in that "they cool the blood and aid digestion."

After growing your fruits and vegetables, do not spoil them in the cooking—but that, as Kipling says, "is another story."

THE FARMER'S GARDEN

[L. G. Hubbard, Champaign county.]

It gives me great pleasure to present to you the subject of the garden, as I believe it is one of the most important with which the farmer has to deal, standing as it does as an index to the whole farm, which should be looked upon in all its parts.

As we wish to get the garden in its true relation before us let us go back to the first garden, and see what is expected of us by our Creator in regard to the first garden. If I read aright we were to dress and keep it. God in His infinite mercy and goodness has made the place or soil complete in all its parts and as we find it in its state it is in good condition for a good crop. He also has given us a large variety of seeds, plants and shrubs which are pleasing to the eye and good for food. Our part is to dress and keep it; that brings the thought that we are laborers together with Him, and only as we work in a line with His laws can we hope for success or perfection in any line of work.

We can tell where we are only by comparison. How does the wild rose by the wayside compare with the beautiful ones that bloom in our yards or the greenhouse of the specialist; the native crab with the large juicy apples of our orchards; or the tough, stringy parsnip with the large sweet, ones of our garden? Thus we see where we are, and each year we realize how hard it is to bring each specimen up to even a low standard, showing our part of the work in its true relation.

To dress—let us pause a moment there, that we may get the true meaning of the word. Perhaps pruning and cultivation best come in there with all their varied conditions as that gives a neat and showy appearance to any field. To keep would imply that the varied ingredients of the soil must be replaced as they are drawn upon by the crops, thus keeping up fertility; saving and propagating the various seeds and plants in their season; also a general oversight that nothing is wasted or lost. And who of us would be satisfied if there was no increase or profit?

As we have now presented the subject, let us look at the flowers for a few moments. What is their use to us? Perhaps the ladies can best answer that, as they stand by a well kept border or a sunny south window filled with choice plants, some in bloom, others with their brilliant foliage. What are their thoughts? Is not the home purer, brighter and happier for their presence? They furnish no food; they can only be used by the senses of sight and smell. What part of our lives best respond to the influence of the flower? Is it not the higher and sympathetic? What home is not brighter for the companionship of well kept flowers? How can you better amuse or instruct your little ones in plant life than by showing them a seed or bulb, then placing it in a pot, placing its food, heat, light and moisture within its reach, and explaining to the child the use of each of these elements in the growth of the plant? The interest of the child is awakened and as the leaves and blossoms unfold day by day useful lessons may be taught of the growth of the body, mind and soul of the child; and we who are older may receive lessons, if we will, that will influence all parts of the home life. For this reason give the flowers a place in every home.

We will next consider the fruits. Because they are used for food at maturity as well as to gratify the eye while the buds expand to flowers and ripen into fruit, they must occupy a larger place in our garden. As some varieties furnish beautiful flowers such as the cherries, plums and pear, they might be placed in the yard or about the outbuildings, thus combining the useful with the ornamental. The small fruits had better be placed farther away from the chickens which every farmer must have.

As far as my knowledge goes the preparation of the soil for any variety of small fruits does not differ much. Any soil in this vicinity which never was a pond hole will produce good small fruits if properly cultivated. If the best results are to be obtained, prepare the patch before planting by plowing deeply. I would set all plants in the spring. For strawberries, 300 plants placed in rows three and one-half feet apart by two feet in row, letting all runners root in as fast as they will; would plant Crescent, Warfield and Bubach for pistillate, and Beder Wood, Gandy and Dunlap for staminate varieties. Of the raspberries, 150 plants will be enough. Plant of the black caps, Eureka and Gregg; and of the red the Turner and London. Blackberries, 150 Snyders, planted in a block with rows eight feet apart and plants three and one-half feet. Currants and gooseberries, 25 of each, set three by six feet—the Cherry currant, and Houghton and Columbia gooseberry. Grapes, 12; set eight by eight feet—Moore's Early and Concord. This amount of plants put out and well cared for will furnish as much fruit as the average family will need to use fresh and for canning.

Cultivation should consist of keeping all weeds out and not letting the ground bake. Mulch strawberries in winter for protection and to keep the fruit clean. After the first year the others may be heavily mulched rather than cultivated, if preferred. By most growers it is considered easier to set out and care for a new strawberry patch than to clean out the old one. The other fruits will last several years if well looked after. In considering the fruit garden it is not so much the money value as it is the health and happiness we look at. For this reason I would urge all to plant and care for a good sized fruit patch.

We will now turn to what most of us consider the most important subject on our list—the vegetable garden. As there is an almost endless variety of vegetables I can only generalize, letting each one choose such as their tastes

prefer. The first part of the season's work will be to go-over a seed catalogue and select such seeds as the needs and tastes of the family require, including perhaps some untried variety. One ounce of cabbage, tomato and such seeds include about 3,000 seeds. Buy just what you need for one year, as old seeds are poor property. Raise your own plants for transplanting if possible, as they are right at home and can be had to set out whenever the plants and weather are suitable. Plants bought in town are often so crushed and dried up before they are set out as to be almost worthless. For raising these plants select some spot on the south side of a building or a tight fence where a cold frame may be made. A glass cover is best, muslin next, but a good board cover will answer. Open it wide on sunny days and close it at night. The soil in this box or frame may be gathered as soon as the frost is out and should be nine inches deep. In this box may be planted cabbage, cauliflower, and if there is room, lettuce and radishes. Care must be taken not to have these plants too thick, and give plenty of fresh air daily, because one good plant is worth a dozen poor ones.

In preparing the soil for a garden, the ideal way would be to plow deeply in the fall, manure the patch in the winter, and as soon as the ground can be worked in the spring, spade up a part of it, putting in lettuce, radishes, onions, peas, beets, and such hardy ones as a light frost will not injure. After a short time a few more may be planted in the same way. When the weather is settled the main part of the garden may be plowed and planted for the summer and winter vegetables. The plot must be laid off in rows of suitable length and width to give the growing crops room for growth and good cultivation. The spaded portion is intended for the very early kinds and may be planted quite thickly, as they will be off before the weeds start much. But the larger and later kinds will need more room to develop well.

We now have the garden planted, which is the easiest part of it. The back-aching part is soon told. Thin the plants to the right distance apart, keep all weeds out and stir the soil often enough so that it will not bake or dry out, and you will have a garden that will be the envy of all your neighbors, as well as a delight to the eye—an ever ready, helpful, as well as healthful friend to the household; also a source of profit to the owner.

The vegetables used directly from the garden, gathered daily as needed, will require no directions from me, while those that are to be used in the late fall and winter will require more care and attention. So I will give what I have found to be a good way to store for winter use. Some kinds require attention earlier than others, but it is usually best to let them remain in the ground as long as there is no danger of frost, and after gathering to keep them so cool they will not grow, and moist enough to prevent withering. To do this, beets, carrots, parsnips and that class of vegetables are dug and placed in crates or boxes with enough moist soil to just keep them, then placed in some outbuilding, where they can be covered with leaves as soon as freezing weather sets in. The leaves can be gathered from the yard, so as to have them ready, and may be quite damp. You will go to them every day or two to get some for use and in that way they can be kept covered suitably. In this way they may be kept crisp and fresh all winter. For cabbages, those that are ripe and solid will not keep very long, but those that are not very ripe may be so put up that they will grow better all winter. With a spade dig a trench in some dry place wide enough to take in three rows of heads set close together, taking out one spade length deep, leaving all the crumbs in the bottom. Pull the cabbages and set them out in this trench, the heads close together, roots well fixed in the soil, with the dirt filled in well up to the head. Set the best and ripest ones first, grading the whole lot closely. When all are set, bring the soil well up to the outside head, taking care not to get any on the heads. Then cover with straw or any coarse litter, lightly at first, adding more as the cold increases, so as to keep the pit just above the freezing point. Begin to use the best ones first; the soft ones will ripen up and be in good condition by spring. Thus you will have good, fresh vegetables all winter, giving the family a supply of healthful food the year round.

HORSE DEPARTMENT.

COST AND PROFIT OF A FARM TEAM.

[By Wm. H. Davis Barnhill, Ill.]

We start on the supposition that the average size working horse will weigh 1,200 pounds. If hard-worked he will require about 14 pounds of grain and 16 pounds of hay to maintain his condition. If the work is extremely hard the grain may be increased a couple of pounds for a short time.

This is perhaps below the usual amount fed by the farmer, but is all that an ordinary horse will be able to digest and assimilate. As a rule the farm horse is improperly fed and as a consequence does not get the greatest possible benefit from the feed consumed. Properly, he should be watered first, then fed hay and afterwards grain, but as a rule the reverse of this is practiced.

We have found that equal parts of corn, oats and bran is the best feed for a working horse but where horses are idle part of the time and run on grass, corn alone is sufficient. At this rate it will require 400 pounds of grain (allowing for four idle days on half feed) and 480 pounds of hay for an average size working horse per month. This is about the ration of the street car and omnibus horses in the city.

What it does cost to keep a farm team a year does not admit of a definite answer as there is such a variation in size of teams and the manner in which they are kept. But supposing a farm team be worked hard six months out of a year, which would require full feed, and to perform light labor or be idle for the remainder of the year, which would require only half grain feed, we can appreciate the cost from the basis of the feed that is required to keep a team a month.

Allowing 28 pounds of grain per day for 180 days we have 5,040 pounds, and average 14 pounds per day for 185 days we have 2,590 pounds, a total of 7,630 pounds of grain; 32 pounds of hay per day for 365 days, we have 11,680 pounds. Figuring on the basis of 60 cents per hundred for grain and 30 cents per hundred for hay we have \$45.78 for grain and \$35.04 for hay, a total of \$80.82. If we would substitute corn fodder or straw for roughness when the team was idle or doing light work, we could reduce the price of hay to that extent, or if we were feeding clover hay we could reduce the amount of grain to some extent.

We are figuring on 35 cents per bushel for corn, 20 cents for oats and six dollars per ton for hay, which is about the average farmer's price. Counting 110 ears of corn to the bushel, you will readily see that our estimate on grain is low enough. At home with 1,000 pound horses our grain will not run over five or six pounds on the idle days, but our hay will probably overrun the estimate.

As to the number of acres it would require to keep a team a year, the quality of the soil would be an important factor. But figuring on the basis of 33 bushels of corn per acre it would require about four acres to supply the grain. The amount of hay is about six tons. With the average yield of this country it would require six acres to produce the hay, but by feeding the corn fodder raised on the four acres we would be able to reduce this about

one-fourth. This would lower the amount of hay to four and one-half acres or a total of eight and one-half acres to supply the team one year. The aftermath on the meadow would ordinarily furnish feed for the team a month. This would reduce the hay acreage to four acres, or eight acres for the total. By sowing rye in the corn stubble it would be possible to furnish some green feed in the spring. This, however, would not furnish a great deal of nutriment, but would aid very much in the digestion and assimilation of the dry food.

Pasture is such an indefinite quantity that I do not care to make an estimate on it, but repeated experiments have proven that an acre of ground will keep a horse in the stable much longer than it will pasture him.

In estimating the net profit realized from the team's work we will take an 80 acre farm as a basis, for a person living on a 40 acre farm can not afford to keep a team. And in making our estimates and divisions of crops, we will have to be more or less arbitrary, as there is no fixed rule to follow among farmers.

Therefore we will estimate 25 acres of corn, 20 acres of small grain and 15 acres of meadow. It will require 13 days for plowing the corn ground, five days for fitting it, three days for planting, 14 days cultivating (four times,) and 16 days for gathering it. We will allow ten days for hauling, presuming that one-half of it will be consumed on the farm, making a total of 61 days in corn crop.

It will require 25 days to properly break and fit the wheat ground, three days for drilling, two days for cutting, three days stacking and one day threshing. What he would have to haul off is indefinite but we will allow five days for that, making a total of 39 days in wheat crop.

It will take two days to mow the 15 acres of meadow, five days to rake and stack it, and allowing eight days to haul off half of it, we have a total of 15 days; now allowing five days for hauling manure we have a grand total of 120 days. And it is during this time that we must realize the profit on the team's work.

Estimating that we will raise 750 bushels of corn worth (at 35 cents per bushel) \$262.50, 200 bushels of wheat worth \$140, 15 tons of hay worth \$90, we have a total of \$492.50. Deducting one-third of this for rent of land we have \$328.33¹/₃ for the labor of the man and team. Counting the earning of the team one-half we have \$164.16²/₃. Taking out cost of keeping team we have \$83.34²/₃. Incidental items of wear and tear will be compensated for by the earning of the team during the remainder of the year.

HORTICULTURAL DEPARTMENT.

FRUIT CULTURE.

[Paper read by Arthur Bryant, Princeton, Ill., before the District Farmers' Institute, in Alledo, Jan. 23 to 25, 1901.]

Everyone is more or less interested in the culture and growing of fruit, but I presume the majority of my hearers are especially interested in its production on the farm, so we will consider it from that standpoint.

Born and brought up on a farm, to me the planting and care of trees, both for ornament and use, always seemed a necessary part of a well ordered farm, second only to the erection of buildings or the preparation for growing the annual crops.

We all appreciate a thrifty, well ordered farm, and in riding over our prairies what seems more bleak and desolate than to pass a farm house with scarcely a tree or shrub to break the force of the winter wind, or shelter one from the summer sun? How refreshing to come to a place surrounded with trees, a well kept door yard, with flowers and shrubbery, the outbuildings, orchard and garden protected by shelter belts, the roadside planted with trees—the whole presenting a picture of comfort and enjoyment. You at once set that man down as one who means to get something out of this life besides the dollars he gathers in from growing corn and hogs. But methinks I hear some good farmer say: "It does not pay to grow my own fruit. I can buy what my family needs cheaper than I can raise it. I would rather give the product of a certain portion of land than be bothered with the care of the orchard and garden necessary for our own home use." Perhaps this method would be all right if you are located near a good market, or close to some one who grows fruit, where you can get it fresh gathered every day. But how few farmers who depend on buying are so situated, or have their tables supplied with fresh fruit during the season. If the fruit is on your place it will be likely to be cared for in some way, but the horses and boys are all too busy to send away for it. And why should not the farmer grow the fruits necessary for home use? He has all the appliances needed—land, teams, tools, and the time if he will take it. He and his family will enjoy these things as much as any one, and with his farm, fruit and vegetable gardens, he can produce a large share of a healthful living, and come nearer being independent than one in any other line of business. It always seemed to me that the producer should be entitled to a liberal share of the comforts and even luxuries that can be grown on his farm.

Much has been written in late years about, "What Can We Do to Keep the Boys on the Farm?" What can we do to make the farm home and life more attractive and induce our young people to follow the business of their fathers? Perhaps second only to a good, sensible, loving mother in the home, would be an intelligent, capable father, who would see that the outside arrangements and surroundings of the farm were so pleasant that the children would not care to leave, and if they did go would want to get back to the home nest as often as possible. Taking it for granted that it is conceded that the farm should have an orchard and a garden, I will endeavor to give a few ideas how they should be treated. In the first place, I would advise the

average farmer not to plant more than enough to have a liberal supply at all times for his own use. More than this brings him into the list of commercial fruit growers, where he will have to look after the harvesting and marketing of the crop, which is liable to interfere with other necessary work. But plant enough so that if your crop is a light one you will have a good supply for your family. The surplus in fruitful years can easily be disposed of.

Locate the orchard as convenient to the house as possible, so that it can be cared for easily, and the good wife will not have to take too many steps to get a supply on short notice. Select good, rolling land, well drained, with a preference for an easterly slope. A southern exposure is more affected by the sudden changes in temperature during the winter. Prepare the ground thoroughly before planting; you can not get it in too good condition. Plant apple trees not less than 25 to 30 feet apart; pear, plum and cherry trees 20 to 25 feet. Some upright growing varieties can be nearer, but it is better to give them plenty of room. Keep the roots covered before and while planting so that they will not get dry, setting them a little deeper than they grew before. Prune off all bruised and broken roots, and straighten them out as nearly as possible in their natural position, filling in the dirt closely around the roots, and pressing it down very firmly. Cut out all surplus shoots that are not needed to make a well balanced top, and remove all branches that have a tendency to make the tree forked, or that start out at too sharp an angle from the main stem. After the tree is set and before the hole is entirely filled up, especially if the ground is dry, pour a pail of water around each tree, letting it settle before filling in the remainder of the soil. The watering is not so necessary, if you have been careful to keep the roots moist before planting and if the ground is quite damp anyway, but you must pack the soil thoroughly around the roots. Beware of setting the trees or stirring the soil when it is very wet, or you will have a hard, caked substance that your trees can not thrive in.

The orchard should be thoroughly cultivated, beginning as soon as possible after the trees are planted, and the soil should be frequently stirred, especially during the first summer. If you can get a good, strong growth the first season you are almost assured of a good stand in the orchard, if it receives even fair care afterwards. But a weak growth gives the tree no vitality and makes it susceptible to every change of the weather.

Examine the trees every spring and fall to see if there are any borers or other insects in them. A good washing of lime or soft soap in May will do much to keep the borers out and also remove the white scale, destroy many insect eggs and clean off the bark of the tree. Removing a little of the soil next to the tree and placing a few leached ashes around the body of the tree the last of May will prevent the borer beetle from laying its eggs. After the orchard is planted and the trees well established they will need some attention every year. For several years you can grow some crop among the trees—anything that will cause you to give the ground thorough cultivation. I would not advise seeding down the orchard for the first six or seven years, and then only for a short time with clover, and never sow small grain in the orchard.

Pruning trees is something that is very little understood by the majority of people. Generally they go at the job with no clear idea of what they wish to accomplish. They think that the trees need pruning and they are going to do it, with the frequent result that they have done them more injury than benefit. Before beginning to prune study your trees and have in your mind's eye what you wish to make of that tree—what the effect of removing or leaving certain limbs will have on its future growth. As with our children, the training of our trees should begin at a very early age. Much of the shaping and growth of a tree can be regulated during the first one or two years after planting. The cutting of a small limb here, the pinching back of a shoot there, will often prevent the necessity of removing large limbs in later years. Severe cutting should be avoided as much as possible. If necessary to take out large limbs, smooth them off nicely and cover the wound with paint or other substance that will keep the water from entering the wood.

As to varieties you should plant, that is a question that each one will have to decide for himself. Most of you are acquainted with the varieties of apples that are grown in your vicinity, if any kinds have done well with you or your neighbors, these are the ones that you should get. The reports of our State society give a list of fruits recommended to be planted in each of the three districts of the State and if you have no choice of your own, you can probably do no better than follow their list. I am frequently asked what is the best apple to plant. That is about as hard a question to answer as to tell what is the best kind of corn, or the best breed of hogs, or cattle. All our leading varieties have their good qualities; none excel in all. The man who gives his trees the best of care will have fair success with almost any of the varieties that are grown in the west. The man that neglects his orchard will succeed with none of them. But we have no greater difficulties to overcome here in northern Illinois than they have in other sections of the State, or in other states that claim to be better fruit states than ours is.

The fruit that was sent from this State to Paris was all from well cared for and sprayed orchards, and northern Illinois got its full share of credit. Mr. Newhall, one of the largest commission men in Chicago, said that one of the best car loads of Willow Twigs that went into cold storage in that city, came from Bureau county.

Plant good orchards and take care of them and you will receive your share of praise.

An abundant supply of all the small fruits is fully as essential to the comfort and welfare of the family as the orchard. From the time that strawberries ripen in June until the grapes are harvested in October the farmer's table should be furnished daily with some kind of fresh fruit. This can be easily done if arrangements are made to have the work done at the proper time. Good soil and a convenient location should be chosen for the garden and the garden well fitted before planting. Soil in first-class condition for growing corn is good enough for any of the fruits, but please see that it is so prepared before you begin to plant, for on this will depend your success in this work. Set everything in rows so that it can be worked with the horse cultivator as much as possible. With the eagle claws or other cultivator set shallow you can work even your strawberry plants, and if attended to at the proper time have but little hand work to do. Strawberries should be set in rows three and one-half feet apart and 15 to 18 inches in the row. Currants and gooseberries in rows six feet apart and three feet in the row. Raspberries and blackberries need more room and will fill a seven to eight foot space between the two rows in two or three years. Early potatoes can be grown between the rows for the first year or two. For best results begin to cultivate your plants as soon as possible after they are set out and on no account let the weeds get the upper hand, or there will be extra labor the whole season, and probably a poor stand of plants in your rows. Frequent stirring of the soil will insure a strong growth of plants and counteract the effect of the dry weather we often experience in August and September. The raspberry and blackberry bushes will need pruning every spring. Cut out the old dead wood and trim back the new growth so that the canes will be self-supporting. Pinch back the new growth for the next year's cane when the shoots are two to two and one-half feet high. This makes them branch and keeps the wood where you can easily reach it. After the currants and gooseberries have borne two or three crops, they should be trimmed every spring, cutting out one-third of the oldest and weakest wood; also remove any excess of young shoots that have grown the previous year, leaving five or six of the strongest ones to make new wood. Should the currant worm trouble you spray with Paris green. If followed up promptly this will keep them down so they will do but little damage, and I think if faithfully attended to they could be eradicated on a farm where you are away from other bushes that are not sprayed.

And this reminds me that you will expect me to say something about spraying the orchard. There is a very general impression among owners of fruit trees that it is a good thing to spray them, but most people seem to have a very indefinite idea as to when to spray and what to spray with; or whether

it makes any great difference how it is done so that they spray. There are some things that are essential to success in spraying. You must understand what you are spraying for; to use the right material properly prepared and make the application at the proper time.

All know the codling moth, or its progeny, the apple worm, which spoils such a large portion of our fruit. Then we have the canker, or measuring worm, that has in former years done very serious damage to our orchards. Also the bud moth and the leaf skeletonizer. These are all insects that chew the leaf and should be treated with Paris green or some other arsenite put on with a fine spray. For the codling moth, the spraying should be done soon after the petals fall from the flowers and before the young fruit turns down and the calyx closes. The object is to get some of the poisons in the calyx so that when the worm enters there and begins to eat, he will get some of the poison. For the Aphis or greenhouse and any insect that sucks its food from the leaf we should use kerosene emulsion or tobacco water, something that will kill by contact with the insect's body. Then we have the apple scab, rust and other fungus diseases that affect the leaves and fruit; for these Bardeaux mixture is used. This is a mixture of copper sulphate (blue vitrol) and lime. All these should be applied with a force pump with sufficient power to make a fine spray that will distribute it all over the tree. The small hand pumps that are to be used in a pail will do for small trees or bushes, but are not large and powerful enough for the orchard. In many cases the Bardeaux mixture and Paris green can be combined and make one application answer for both evils.

I scarcely have the time to go into details of apparatus for spraying. If possible get instruction from some one who has had experience in the work, also in the preparation of the different solutions. This will likely save you from making many mistakes in the beginning and make the outcome more satisfactory. The later volumes of the report of the State Horticultural society will give you assistance in this work. In them you will find formulas for making different spraying solutions, also the fruit lists for the different districts and much other valuable information.

Of course all this means a good deal of work and some expense in preparation. Perhaps many will think that they can not afford to go to this trouble, but what do we get without some labor and more or less expense? In many neighborhoods perhaps several persons could join together and get the necessary outfit—some one of them looking after its care and preparing the solutions. I think that eventually the business will be largely done by some one person getting a complete outfit and going around doing the work as the threshing is now done. And now comes the vital question, "Will it pay?" This every one will have to answer for himself. One thing is very certain, that it will not pay to plant an orchard and neglect it afterwards or to grow scabby, knotty fruit.

But as I said before we have no more obstacles to overcome than they have in other sections of the country, and today if I wished to go into fruit growing for a business and for profit, so far as soil, climate and insect pests are concerned I would just as soon locate here in the northern district of Illinois as any place I know of. We can grow just as good apples here as anywhere and those that will keep better than if grown further south.

SPRAYING AND SOME OF THE BENEFITS TO BE DERIVED.

[By Menzo Jordan, Savoy.]

The subject of spraying is a large one and can not be covered by one small paper. I will speak especially of its effect on apples. The benefits to be derived are so many and great that it is almost a case of having to see the sprayed and unsprayed together to believe there could be so much difference. Most farms in this farming country have a small orchard, or some pretense of



Spraying in A. V. Schermerhorn's 100 acre apple orchard, Kinmundy, Ill. Capacity of tank 200 gallons. Man on tank operating a three discharge Vermorel nozzle; man on ground using a two discharge Vermorel nozzle; average capacity 800 gallons per day.

one, and in spite of this fact most farmers, when they want good fruit, and many times when they want any, have to buy it, where, had they learned to properly care for an orchard, this would be reversed and they would be producers and consumers instead of purchasers or have none. An orchard can not be set and left to itself and nature in these days of fungi and codlin moth and be expected to grow and produce fruit with no care whatever. It must be carefully tended from the beginning and not left to blue grass and weeds, but cultivated and pruned by man (not cattle or other animals), and as it comes into bearing it must be sprayed, and sprayed practically and thoroughly at the right time, for it has been very plain to the orchardist and fruit grower for some time past that it is -spray or surrender, no spraying meaning no fruit, and of course no fruit no profit.

Spraying of fruit trees for their protection from fungus diseases and insects dates only a few years back, originally in France; some of the first applications were made with a small broom from a bucket, a very simple operation, and it has grown no more complex. At one time it was possible in this State to set out an orchard and no trouble was found in growing marketable fruit from it, but the bringing together of trees and host plants for many insects and furnishing shelter for them has made it possible for them to multiply and flourish, to make themselves known, or in other words, to be discovered, as have been means for checking and eradicating them. There are three separate classes of pests with which we contend when we spray, and each class requires its own special remedy. You can not kill insects with a fungicide, neither can you kill the fungus with an insecticide. First, the fungus, or scab, which kills; second, the chewing insects; third, the sucking insects and scales. For the fungus, the remedy Bordeaux kills by chemical action; for the chewing insects we must use poison; and for the insects which suck the nourishment from the tree, we must kill by contact—smother them by using oil and soap mixtures to exclude the air from their bodies. The San Jose scale and oyster shell bark louse come under this class.

The codlin moth and apple scab fungus are the best represented of their classes in this section of the country among those which the fruit grower—the apple grower especially—has to contend; (however, these are not the only ones—his enemies in this line are quite numerous.) These can be controlled by spraying, if done at the proper time and in a thorough and practical manner. The insect which bothers cherry and plum trees most is known as *curculio*, which is, on account of its manner of life, one of the most difficult insects with which we have to combat. The eggs from which the grubs that do the damage hatch are laid by a small, winged beetle, during a period extending from the time the fruit is set until it is three or four weeks old and more, in a small opening made by the beetle in the fruit; around this opening another crescent shaped one is made; this is very noticeable on the plum. These hatch in three or four days; the grub or worm starts immediately into the fruit, usually destroying it. When the fruit drops in which the grub has thus fortified himself, he comes forth, goes into the ground a short distance and enters the pupa stage. The following spring he comes forth as a beetle, ready for another year's damage. It will be seen from this short description that it is a very hard matter to place poison where the beetle which lays the eggs will get it. On observation it has been found that it feeds upon the foliage a short time before laying the eggs, but not to any great extent. This is the only time when poison will do any good. Jarring the trees has been found to be a valuable adjunct to the spray; this should be done early in the morning before the insects are active. A sheet of some kind should be provided and placed under the tree so as to catch them that they may be destroyed. Strike the tree a quick blow with a mallet, a cushioned one, so that the bark will not be broken, thereby injuring the tree. This will loosen the hold of the sleeping insects and they fall.

When we spray we must know to a certainty what we are spraying for and study the time at which we can do the most good. Before going any farther let it be understood that spraying is a prevention and an insurance, so to speak, and not a cure. We must begin before the things we are to fight begin their summer depredations; in fact, we must be first in the field, ready to meet them when they come, if we wish to be successful.

Codlin moth, the grub which chews its food, passes the winter in the larval stage in a cocoon and weblike contrivance which it has woven about itself in the fall, in the crevices of the bark on the limbs, trunk and other places. With the warm days of spring, a small moth or butterfly comes forth, and as the fruit is setting and after it is set, lays eggs, generally in the calyx end. These eggs are so placed that as the fruit increases in size and weight and turns down, they are just enclosed in the blossom of the fruit. Now, if poison can be applied (and it can with no harm to any one except the worm), so that when the eggs hatch and the young worm starts into the fruit it will encounter the poison, his days and damage are over. To do this, a very small amount of poison is necessary, but this small amount must be placed where the worm will get it without any exertion on its part, for it will not travel over the fruit in search of it. There are two generations of codlin moth each season, the second depending on the first; therefore, if you destroy all the first there can be no second, which comes on about six weeks later. This brood seems to have no preference as to place for attack, anywhere on the surface being liable; it is almost impossible to do anything with them.

Apple scab fungus is a minute vegetable growth, spoken of as a parasite, with a name much larger than itself singly, which affects fruit, leaves and twigs. It lives through the winter in the dead leaves and debris usually found under trees, and other places. Fungus is propagated by means of spores. As these spores are distributed by the wind and other means they find lodgment on the leaves, etc., developing and causing the leaves to turn brown and fall prematurely, thereby injuring the next year's fruit buds and the general health of the tree, for no tree can live and flourish without foliage; and upon the blossoms and eventually the fruit as it is developing from the flower. At this time it is very tender, a very slight attack causing it to die and fall off. The effect upon the fruit which escapes the earlier attacks is noticeable by the rough brown spots and the deformed appearance caused by the fruit trying to cover up the wounded portion. The fruit becomes distorted and tasteless and quite likely drops from the tree, (it might as well, for 'tis no good).

Paris green is used at present by most persons who spray for codlin moth, and Bordeaux mixture for the fungus. The two may be applied together. When this is done three sprayings will in most cases be found sufficient. The first application should take place just as the buds are beginning to show pink, the second just as the blossoms are beginning to fall and are falling, the third should take place from ten days to two weeks later; if by frequent rains it be washed off it should be applied sooner. Spraying in wet weather should be all the more persistent, for it is then that the fungi grow and flourish best. From two to six hours are needed for the spray to "set" so as to do the most good, therefore spraying followed by rain in less time than this should be gone over again, and be sure that it is thoroughly covered.

Now as to formulas: Paris green is used at the rate of four ounces to 50 gallons of liquid. This should be made into a paste with a small amount of water before it is placed in the barrel or tank from which it is to be pumped, and after being placed there it should be stirred or agitated, for Paris green does not dissolve, but remains in suspension and settles to the bottom if left without agitation, and you get almost all the poison in one place and leave the balance with none. Most spray pumps are so constructed as to furnish this agitation by mechanical motion.

Bordeaux mixture consists of four pounds of sulphate of copper (known commonly as blue vitrol) and four pounds of unslaked lime to 50 gallons of water. In a barrel or other suitable vessel, always of stone or wood, place 25 gallons of water; in this suspend near the surface in a loose woven sack the copper sulphate. Allow it to thoroughly dissolve. In another vessel place the lime and slake well, add water enough to make 25 gallons. In this condition neither will be injured by standing any length of time. When ready to use stir each well and pour together through a screen to remove anything which would clog the pump or nozzles, and add the Paris green.

The mixture is now complete and you are ready to spray. Of course you will need a pump made especially for this work. When you get a pump get a good one. A big cast iron with a stuffing box is as good as no pump at all. It should work easy and have few wearing parts, and parts coming in contact with the liquid should be brass, so they will not corrode; and let me assure you that after working the easiest one made many hours at a time, you will find no need for Indian clubs or patent exercisers. A pump manufactured by a Michigan firm is probably the best pump on the market at present for all around spraying purposes. This pump was designed for use in their own orchards, and proving so successful was placed upon the market. All parts coming in contact with the liquid are brass and will not corrode. One of these pumps with ordinary care, with no more to do than most farmers have, would last a lifetime. We have some of these pumps which have been in actual and extensive operation for three seasons and are good for several more. To reach the uppermost parts of the trees, extension bamboo poles should be provided and ample hose, say 16 or 18 feet. The poles can be obtained any desired length from three to 16 feet. The nozzle which is best suited for the application of Bordeaux and combination mixture is the bor-morrel. These can be obtained with from one to four openings. When you spray, spray like you meant business. Always have plenty of pressure; the more pressure the finer the spray and the better applied. You must touch every spot you intend to protect. Spray one tree at a time and cover it all over systematically. Apply until the leaves just begin to drip.

Spraying is sure to be of some benefit each year, but unless carefully and honestly done it is time and money wasted. Don't get discouraged and say spraying is no good if results the first year are not as satisfactory as you had expected. Your success will increase with your experience and study.

I will now attempt to show some of the benefits to be derived, the results of some experiments and of actual orchard practice in a Champaign county orchard. To show the imperativeness of the second spraying being applied immediately after the blossoms fall, I will speak of an orchard of some 400 trees. Work had been done on this as soon as the blossoms began to fall. About one-third had been sprayed when wet weather set in and no work was done for two days, when the other two-thirds was finished. When the crop was harvested the results were as follows: On the one-third sprayed before the rains there were 150 barrels of No. 1 stock and ten of No. 2; while on the portion sprayed after the rain only two barrels of No. 2 stock were gathered, the balance (and it was a small one) were left for the birds and nature's refrigerator. The reason: During the wet weather the fungus attacked the tiny apples and they dropped to the ground, making it appear as though no fruit had set. The part which bore the crop also bore a good foliage up to the winter. The past season this same orchard produced 400 barrels of first class fruit and received only three sprayings, where, had it not been properly sprayed, I venture to say there would not have been ten barrels of first class fruit and a small chance for a crop this year.

Here are results of some experiments the past season: Seven trees in the orchard were left unsprayed the first time over; the second time all were left but one, which was sprayed with the combination mixture. The others were left the entire season without spraying. The varieties were Ben Davis and Grime's Golden. From a Grime's that received no spray one-half bushel of apples were picked at picking time; about 15 of these would make fair No. 1's, the balance were deformed. Another tree of the same variety, same age, with the same cultivation, but sprayed three times, produced seven bushels of No. 1, two bushels of No. 2, and to this must be added six bushels blown off early in September, a total of fifteen bushels—or fifteen to one-half in favor of the sprayed tree. These trees bloomed just alike and received like treatment except the spraying. The Ben Davis which were not sprayed produced at picking time about one bushel of apples, not one of which was perfect. Just as many apples set on those trees, but commenced dropping just as soon as they were set, as did the leaves, and they continued to do so until these trees had scarcely any foliage on them, while trees in the next row which were sprayed had perfect foliage and had borne two

barrels of apples each. On the tree which was sprayed once there were about two bushels of No. 1 stock and four bushels of inferior stock. This tree, however, had excellent foliage and has an abundance of fruit buds at the present time.

Will it pay to spray, is the question always asked before going at it. The answer should always be, "Yes, if you do it right." One grower who considers it in the light of a necessity, sums the subject up in this manner: The best is generally the most profitable commodity—there is always a demand for it, and the poorest least so; why, then, have poor fruit when with a little labor and pains and a small cost you might have the best? Quite true it is, that at the time when the spraying should be done the farmer is busy with his crops. But why could not several who have orchards, but none large enough to warrant the purchase of an individual outfit, club together, purchase a rig and let some competent one do all the spraying for the several owners? The expense would be light for each.

POULTRY DEPARTMENT.

PRACTICAL POULTRY POINTS.

[By Mrs. George R. Fox, Chapin, Ill.]

In my year's experience with poultry, I have made a success—not a “howling” success, but a cackling, crowing success. I raise chickens both for pleasure and profit. Pleasure, because I think I was born with a love for every living, growing, moving plant and animal which God has created (except noxious weed and vermin), and I certainly love to gather the beautiful fresh eggs from the loft, the manger, the bush or the more practical but artificial nest in the hencoop. And I love to watch their evolution from the time they are entrusted to the care of the “wooden hen,” until first the candle shows there is a mysterious life therein, and later a cunning, fluffy, downy ball pecks its way into existence and announces its arrival by an energetic “peep.” I raise them for profit because I like to sell these same broilers for the fancy price I get for them when I can get them into the market early enough. And again, I consider myself well paid for the time and money I have spent by the health I have gained through my interest in my new outdoor pursuit, for my hens have not cost much—only a few bushels of corn and oats—and if I can make \$15 or \$18 a month, clean cash, besides seeing that my home and loved ones there are well cared for, why shouldn't I enjoy chicken raising? Is there any other way in which a farmer's wife with her own household to manage can do as well with as little trouble? I think not. I have no wonderful new secrets to tell you about chicken raising. What I know I have found out by reading, by close observation and experimenting during many years of my life, and by one year's actual experience in poultry culture. In giving you ideas no doubt many of you will recognize the fact that others have had similar views on the subject. I have read, seen and heard; I have accepted what I have tried and proved not wanting, and have rejected the rest. My advice to beginners is above all things to distrust their own pet schemes and ideas, based on theory and lead pencil work rather than on actual experience. I would also advise them to steer clear of the worthless poultry papers, for much of what is printed in them is not only valueless but dangerous, for a man or woman who does not know any better may accept and follow bad advice just as eagerly as pure gospel and thus be misguided and harmed beyond consideration. The true poultryman should continue learning throughout life. I have found that it pays to get in the shape of advice the best that money will buy—that which we get for nothing is too often worth no more than it costs. The story of success may be told in varied form, but when it is analyzed, its component parts are found to be: Knowledge gained by experience and applied to existing conditions, with patience, pluck, industry and determination. The poultry industry is a business, subject to precisely the same laws as govern all other commercial and productive enterprises. There are here found the rules of average, in the problem of success versus failure, and the same demands regarding persistent, patient labor. All great affairs are matters of growth. Nothing exists that sprung up fully developed. But history of

great success is generally the same old story—the man and the opportunity came into conjunction, and man was wise enough, strong enough, to dominate the forces. So when the question is propounded to me, “Is there money in the poultry business?” my answer is, “Yes, for the right kind of people”—for the energetic, earnest men and women who mean business; who have a thorough system that no detail may be neglected, that every part of every day’s duties shall be attended to promptly and at the proper time. But the class who are not fit, and haven’t ambition for any other kind of business, who are thoughtless and heedless, will do well to give poultry raising a wide berth: Their habits will not win in this business. A little neglect in one part today, another in some other tomorrow, will turn certain success to as certain failure. But the returns are quick, to those who deserve them. I do not wish to convey the idea that it takes a high order of intelligence to succeed with poultry, for I do not think it does; but I do think extraordinary common sense is the one thing most needful. To succeed in any line of work we must admit that slothful, careless, extravagant habits must give way to thrifty, painstaking and economical methods. The poultry business is no exception to this rule. Thought must be put into our work. Cause and effect must be studied, all the details must be looked after with intelligent care, and the hand that receives the income must constantly watch the hand that pays it out. Where these methods are employed as a rule, the price of poultry and eggs does not fall below the cost of production, but the chances are for profit—and large profit. There is apparently no limit to this business; no one has ever reached a limit of profitable investment. There never was and I do not believe there ever will be enough poultry produced to prevent first class poultry and eggs being sold at a paying price. There is abundant room, and always will be, for those who can produce the best, and who take the trouble to find a class of customers who will take the best regardless of price, and there are plenty of this class of customers. While we know of exceptional cases of success in poultry culture being achieved by men of ordinary ability, who were simply good American citizens, and attended carefully to their own business, we also know that some of the brightest men and women of this generation are breeding standard poultry and are doing their best to produce fowls approaching nearest to perfection. And to succeed in such company means work. And if we go into the poultry business with a determination to surpass all others, unlike Alexander the Great we will probably not sit down and weep for more worlds to conquer, for we will find plenty of big, brainy, whole souled men and women engaged in poultry culture who will afford competition enough for all who wish to compete. The knowledge of these facts should not have a tendency to discourage those who wish to enter the poultry business, but they should influence us to move forward cautiously. “Go slow and learn to paddle” is a very common maxim, but it is a good one. I think it should be the watchword of every amateur poultryman. We should invest slowly and surely, learn our own business as we go along, make sure of our footing step by step, and not try to reach the top round of the ladder at one bound. Have a strong determination to succeed and stick to it until you do succeed, is good advice to those who launch out in the poultry business, as well as in any other honorable occupation. The management of fowls is like that of every other variety of living organism, in either animal or vegetable kingdom. Life means contest for existence; and perfect life is triumph over antagonistic forces. This idea needs no elaborate argument. The cornfields must be cultivated, the herds must be protected. All over this country far and near we have men and women who have ridden the storm of reverses and today are prosperous in the poultry business. The poultry business of America is no small affair. It is founded on the rock of legitimate profit and will be as enduring as the hills. The many thousand men and women who are engaged in it have absolutely nothing of which to be ashamed. There is nothing little or trivial about it. At its foundation is the enormous annual production and consumption of eggs and fowls, two of the most wholesome foods known to man. It is a business that contributes to the welfare of practically every man, woman and child in Christendom. Yet I would not advise any to go into the poultry business who have not a natural liking for fowls, for to them it would mean failure both in actual

profit and as a pastime; for care, which is really the most important part of the routine and management of poultry keeping, involves considerable work and a personal interest in the birds. There is disagreeable work, too, in the routine of duty. I mention these facts because I wish to thoroughly impress upon the mind of the novice the truth that fowls are a product of artificial effort. They are brought to their present state of excellence through cultivation. Therefore they can be maintained in their perfect condition only by attention on the part of their masters, or mistresses, if you please, for it is said woman fits into the work of poultry raising and handling as neatly as peas in the full pod in which they grow. Women are said to be more successful at this work than men. This I think is because men, as a rule, have not seen fit to give the same amount of thought and time and labor to the work. The farm seems to be the natural place for the poultry, because every crop raised contributes directly or indirectly to their support. You can not raise corn or hay for the cattle or horses without producing a large amount of waste product which the hen alone can eat and profit thereby. The seeds of the grass, the waste of the cornfield, and the broken heads of wheat and oats and even the noxious weed seed are all appreciated by the hen. Although fowls require as wholesome food as any class of live stock, they can be fed perhaps more than any other of animals on unmerchable seeds and grains that would otherwise be wholly or partially lost. And there is less danger of injury to poultry from these refuse seeds and grains than with any other kind of animals. I think every farmer should know about poultry because it fits in so well with almost any line of farming business and pays so well as a side issue, and because it is not the large poultry plants of the country, but the numberless small flocks kept on the thousands of farms of the United States, that must ever be the chief source of supply of that most excellent article of food called eggs. Unfortunately the average farmer's methods are not up to date, and his egg crop, by the time it reaches the table of the consumer, is far from being the delicate and palatable article that it was when first laid. It has suffered marked deterioration in quality and flavor. This is a positive injury to the business. Whatever lowers the quality of a food product, decreases the consumption of that product, and is a direct injury to that branch of trade. The farmer's slovenly method of collecting and marketing eggs results in the bulk of them being undeniably stale when they reach the consumer; hence decidedly fewer of them are eaten, the egg trade is hurt thereby. Not only is there a lesser volume of trade, but a most excellent article of food is passed by because there is a perceptible lack of the desired quality. I believe there is good profit in the fresh egg trade for the farmer who wishes to cater to it, but as fresh eggs and poultry are in demand, far beyond anything that the natural method can produce, the only solution of supplying the demand is for the farmer to adopt the artificial method of raising chickens. It is plainly to his advantage to do this if he expects to raise fowls for egg machines, for the early hatched pullets are the most prolific and most profitable egg layers, and are the chief reliance for success in egg farming. The incubator is an always reliable "early setter" which always continues the line of early pullets. Hens should be kept exclusively for egg production. Their valuable time should not be wasted in doing work that can be done better and cheaper by artificial means. The farmer who each year raises pullets that are beginning to lay about Oct. 1st, provided they are raised from a prolific laying ancestry, will be well equipped for an all-the-year-round egg supply. I know many farmers and farmer's wives object to incubators. I believe the objection is based on a certain mystery supposed to be connected with them. They imagine they must watch the machine all day, and sit up with it nights. This is a wrong idea; it is not a bother to run an up-to-date incubator, nor is it at all difficult, provided the machine is placed in a cellar to avoid the variations of temperature. My son, only ten years old, ran three incubators for me last year, and did it successfully too; but generally speaking, I think the farmer's wife is the best person on the farm to run an incubator. In the first place, she stays at home more than the farmer. She is more particular about the details of the house, and she is decidedly more patient, careful and persevering. These qualities

fit her nicely for incubator work, and she will receive good profit on the time and work she devotes to it. I have demonstrated to my own satisfaction that a big poultry farm need not necessarily be measured by acreage. I believe only a few square feet devoted to poultry culture can be made to yield a paying investment, provided the owner, of this establishment is willing to pay this price—he must give it his personal supervision, constant attention, look ahead, plan, work close to his plans and neglect nothing; then he will succeed. In raising chickens, the very first thing essential to success is good eggs; they are the all important point in poultry keeping. And in order to secure these we must go back to the care and feed to the blood. The stock must be strong and vigorous and the way to get "hatchable" eggs from them is to not try to make them lay every egg possible by stimulating food and by feeding them too much, but give them good wholesome food such as they would find in a free range of a farm in summer, and feed so that they are always ready to eat up every bit you give them. And make them work for all the whole grain. Domestic fowls whose conditions approach more nearly the natural conditions lay most of their eggs in the springtime. It is our duty then, as feeders, to note the conditions surrounding these fowls at that time. The weather is warm, they have an abundance of green food, more or less grain, many insects, and plenty of exercise and fresh air. Then if we are to feed for egg production, we will endeavor to make it springtime all the year round; not only to provide a warm place for our fowls and give them a proper proportion of green food, grain and meat, but also provide pure air and plenty of exercise. When the important egg is supplied, all the sources of profit in the poultry business are opened up and take a tangible form in the shape of dividends. Eggs to give the best results in hatching should be set soon after laid. I have kept them three weeks by turning them every day or by standing them on the small end, but to do this they must be kept at a temperature of about 60° or lower, never higher. I would advise using eggs from one variety in the same incubator, and if egg farming is the aim, I would say let that variety be the Leghorn, as they hold the world's record as the greatest egg producers, I believe every one who handles poultry, finds their heart's idol in some particular variety. While I have both Leghorn and Barred Plymouth Rock, the latter are my favorite. They are the farmer's favorite and are termed America's idol. And if any one wants a business fowl, one that is always ready for business rain or shine, one that never deserts its post nor shirks a duty, I believe the Barred Plymouth Rock fills the bill nearer than any other breed. They are excellent "all the year round" layers, and will lay as many eggs as any breed that incubates and rears its young. In regard to the care of chicks, I would say they must be kept comfortably warm and perfectly dry, must be sheltered from wind and weather, and they must have pure air. Pure air of course implies absolutely perfect cleanliness. In regard to feed for chicks I would say we are all learning something new about how to feed chicks every day, and no set rule can be given as the best. At a religious congress held at Chicago a few years ago, a noted theologian made the remark that, "There are as many roads to heaven as there are men to travel them." He was a noted divine and meant that each and every man has his own peculiar ideas as to what constitutes true religion, and of which is the right and wrong way of doing things in this world. So it is in poultrydom—each breeder has his own idea as to what is the best method of feeding and cooping chicks. I have had the best success in feeding them dry food—Kaffir corn, cracked wheat, oats and corn, clean water. Sharp grit and pulverized charcoal should be before them at all times. Someone asked me how I keep lice down. I do not keep them down; I begin ahead of them and prevent them from ever getting up at all. I think that is the only good rule; don't wait until you find them, but keep fighting them as if you knew they were there. There are so many things that will prevent these pests from ever getting a start that it is a matter of surprise to me that they are not utterly destroyed off the face of the earth. I don't believe too much can be said in regard to the importance of farmers improving their stock, for in this day and age of the world, no man is justified in handling mongrel poultry. It takes no more house room or yard room, no more feed, no more time or labor to raise 100 or 1,000 pure blood fowls than it does to raise an equal number of mongrels, but the value

of the product in one case ranges from twice to several times as much as in the other, according to your skill as a breeder and the market you reach. One day last fall Armour & Son, who are killing 3,000 to 6,000 head of poultry a day, received at their slaughter house a few coops of culls from a farm where were kept pure blood fowls only. They gave instructions for these fowls to be kept and shipped by themselves in order that they might compare them with the common stock, of which the bulk of the receipts consisted. This was done; both the common fowls and pure bloods were shipped the same day to the same place, and when the returns came in it was found that the pure blood fowls brought three cents a pound more than the common chickens, making a difference of about \$480 a day, or \$144,000 a year. The bulk of this difference goes into the pockets of the farmers, for Armour & Son get only a small per cent commission for the work they do. We can only readily see from this the importance of the farmer improving the quality of his stock. Mr. R. F. F. Candage, president of the Farmers' National congress, says that a large portion of American prosperity is due to the industrious American hen. He demonstrated by statistical proofs that the energetic biddies of the United States, through habits of early rising and by attending strictly to business, seven days in the week, annually lay \$100,000,000 worth of eggs. But this is not all—he further says these biddies raise families that eventually go on the market as roasters and broilers and this increase has a total value of \$40,000,000. Great is the American hen as a wealth producer. Her output has a bigger cash value than the Klondike, Nome and the Transvaal. In one year the hens of the country will pay the net bonded debt of Greater New York and have enough left to buy all the gold and silver mined during the year, that is if they could borrow \$10,000,000 from the ducks and geese. One year's earnings will buy all the minerals produced in a single year and will pay, in addition, every cent on farm mortgages. Notwithstanding these facts and notwithstanding the large number of incubators in use and the thousands of dollars spent on poultry plants, it is still a fact that three-fourths of all the poultry is raised broadcast by the farmers' wives. Yet the bulk of the hundreds of thousands of dollars worth of poultry and eggs produced by the farmers' wives goes to the local dealer and are by him shipped (at a good profit) to some large city. We give this dealer or huckster this per cent for merely knowing where to ship them, for simply writing the address of some commission merchant on a few tags and turning the crates of fowls over to an express company. This is throwing money away, and every cent thus lost would be clear profit if retained. We should make a little investigation along this line and ship direct to market. But let us remember this fact, the deadbeat commission merchant will find new victims every year, but we must not allow ourselves to be caught in his crowd. There are reputable commission merchants in every city with whom we are sure to get a square deal. We must find them. We have read of Maud on a summer day who raked, barefooted, the new mown hay; we have read of the maid in the early morn who milked the cow with the crumpled horn, and we have read the lays the poets sing, of the rustling corn and the flowers of spring; but of all the lays of tongue or pen, there is naught like the lay of the American hen. Long, long before Maud rakes her hay the American hen has begun to lay, and ere the milk maid stirs a peg the hen is up and has dropped her egg. The corn must hustle and the flowers of spring, if they hold their own with the barnyard ring. Long live the American hen! May her cackle never grow less! May her comb grow red with prosperity! And may her eggs roll the mortgage away from many a farm.

CHICKEN PAPER.

[By Mrs. C. Cornmeyer, McLeansboro, Ill.]

For the increasing egg production now making a strain of layers or compelling any breed to lay all the eggs possible, is a matter that depends entirely on the ability of the breeder. It is not so much a question of any particular breed, although some breeds lay more than others. Some breeds are called prolific layers. By nature Leghon and Hamburgs are called

natural layers, but on the other hand Plymouth Rock, Wyandottes and Brahmas were originally fair layers, but by judicious breeding, careful selection and scientific treatment have become as good layers as any we have. Of course hens lay eggs naturally, but to compell them to lay their full quota certain points pertaining to care and feed must be understood. The best results in egg production have been attained by experiments. These are sometimes expensive, but they pay eventually, and without them no progress could possibly be made in the improvement of poultry. What we feed a hen brings one of two results—either flesh or eggs; not generally both. It can be readily understood, therefore, that the feed is important. Oldfashioned people have oldfashioned methods, and the feeding of 20 years ago was mostly to sustain life—in other words hens, like all other animals, had to be fed in order to exist. This idea still prevails among some farmers. Their hens can roost here and there and get their feed the same, and they suppose that is all that is necessary both to maintain life and produce eggs. Skillful breeders understand this difficulty; they feed to produce eggs and also to maintain both life and health. Eggs should be the first consideration, because they represent the earning quality of the hen the same as milk represents the earning quality of the cow. I am sure no dairy man would keep a poor milker; he would soon replace her with one better. Some few years ago an experiment was made which seemed almost contrary to nature, but which resulted in a decidedly better egg yield. I refer to the yarding of fowls. It seems natural to let the fowls have full range. Their nature seems to point to a roaming life so they can pick such food as suits their fancy, but this requires too much exercise; it results in eating to live rather than eating for egg production. Personally I am a great believer in yarding hens. I think at least 30 per cent more eggs can be had by so doing. Yarding of hens has another advantage, one is able to determine exactly how many eggs are laid and feel sure all the eggs are gathered each day; there is no chance for eggs to be lost in the weeds or for some biddy to steal her nest in some out of the way place. Of course it takes more labor, but not much more time than it does to look all over the farm every evening to see that you get all the eggs, and then a great many are lost during the year. When moulting begins let the fowls have full range until moulting is over and they begin to lay, then back in the yard they must go and the egg producing process begins again. Then you know what food they get and if it is the right food for egg production or to produce flesh. I attribute a good egg yield in winter largely to the care the hens get. In winter hens should be given a warm house and be fed regularly and supplied with warm drinking water and warm food of mornings, and warm corn of evenings or parched corn of evenings is better for laying hens. This I know by personal experience. My hens in winter are my special care and I am rewarded with a good yield of eggs when eggs are a good price. A good motto in the poultry yard as well as everywhere else is, anything worth doing is worth doing well. Women and poultry make an excellent combination, even in the kitchen when pullets become nearly matured. Get them early in winter quarters so they may settle down and become at home. As a result of practicing these ideas in the care of my own hens they began to lay in November and some in October. Whenever I pass a farm house where the hens are roosting out in the trees and open sheds in winter I feel morally certain that I am near a man that thinks hens don't pay. When a wife comes to such a man and asks for money to buy groceries he will say, "I have no money for groceries, you will have to do without." "But we have no coffee," the wife pleads. That man will say, "You have got meal, that is good enough." But, thank God, the American woman is planning and working for her own pin money, independent of man. She can take an egg case full of eggs to town and get her groceries and the necessities of life without asking for money from her husband to get him something to eat and clothe their children. Farmers should take more interest in the old hen. If they would keep account for one year of the hen and the hog, and see which is the most profitable, they would see for themselves that the hen stands on as good footing as the hog. A man with good judgment will see that his wife has a good house for her hens and plenty of feed, for he knows how often she saves his pocketbook from emptiness.

Time is well employed in studying the growing stock and selecting the best

for next year's breeding. Reserve more than needed, then cull them in the spring, and always keep the best, and you will not hesitate to bring some of your finest ones to the Farmers' Institute, and if your county fair deserves to be patronized and sustained, exhibit your choice poultry and help to add to its interest. If it has horse racing and side show attachments, keep your poultry and yourself home; but let the farmers come together and have a good, honest fair and let the people know what they are doing and see if they have made improvements in any way. Let them advise others and they can do likewise. I hope the farmers' wives will take an interest in this good cause, and next fall come out and let the people see what Hamilton county can do.

SHEEP DEPARTMENT.

HOW I HANDLE MY SHEEP.

[By E. D. Funk, Shirley, Ill.]

When I was a small boy—a few years ago—it was my duty to attend to the chickens and hunt the eggs in and about the barn, hog pens and lots, and for the greater part of the night I would be hunting fleas. An old uncle, who was visiting at our house, advised me to get some sheep; that the fleas would get into the wool and could not escape. I tried the experiment. I commenced with a flock of 13 ewes. Have kept the increase of ewe lambs and invested the net proceeds of sales of wether lambs, old ewes and wool until now we have in the neighborhood of 100—and no fleas.

Every farmer should be the owner of at least a few sheep. He will scarcely miss the amount of food required to carry them through certain periods of the year, but he and everyone else will notice and appreciate the "cleaning up process," at which they are continually busy in the fence corners, along hedge rows and around the lots, especially if there is undergrowth of brush sprouts and weeds. Four years ago I purchased a small farm adjoining my father's land, which was to say the least one of the worst rundown places in the county, with obnoxious weeds of all sorts, the burdocks higher than my head. To make a long story short, I turned in the whole flock of sheep and in a few weeks they had the burdock eaten right into the ground.

The sheep, while it is one of the daintiest of animals, will live and grow fat where a cow would starve to death. Every fall we aim to cull out and ship off all old and weak ones; also fatten and ship the wether lambs during the fall and winter. We make it a point to buy the best registered rams we can find. There is nothing gained in using a "cheap Jersey" even on a flock of grade ewes.

If one wants to raise early lambs—that is, winter lambs, one must be thoroughly prepared and clearly understand one's business. I don't advise everyone to try it. It means sleepless nights, nursing bottles and warm blankets. They usually bring a good price, to be sure, but it is a question whether the extra dollar pays for the extra care and attention.

We aim to have our early lambs come in January and first of February, the earlier the better. The ewes are kept in a good, thrifty condition, and fed a little sheaf oats and clover hay. They must be made to take plenty of exercise and not be housed until just about lambing time except in extremely stormy weather. We then watch our ewes very closely and are obliged to be with them almost continually, both day and night. Of course we keep them in a good, warm barn. We fence off little pens about six feet square and put a ewe and her lambs in by themselves for two or three days, until the lambs have become strong enough and sufficiently acquainted with their mother to know her and find her when turned in with a number of ewes and lambs in a larger place provided in the barn. We now feed the ewes a little corn and oats and all the clover hay they want, or shredded fodder, which makes an excellent roughness for sheep. We also have in a convenient corner a place where the lambs can run to a small trough with coarsely ground cornmeal and oats and a little oil cake. You will be surprised how quickly they will find that corner and visit it many times a day. On bright, sunny days they

have access to a dry lot on the south side of the barn. Of course plenty of good, pure water is by them all the time. By the middle of March or first of April the earliest lambs should weigh 40 pounds and be ready for market, and if we could but have a contract with some of the leading clubs of New York or Chicago and get 25 cents per pound for them, as I know of a few favored ones doing, there would be a good profit in raising early lambs. Almost anyone can raise spring lambs. We aim to have our spring lambs come from the middle of April to the middle of May out of doors, and give them very little attention unless the spring is extremely late and weather bad.

We do not house any of our sheep at any time of the year unless the weather is very bad and snow very deep, or unless we are feeding for the market. We have good hedge wind breaks and groves, and a good dry, open shed facing the south is not a bad idea.

We insist on our breeding ewes taking plenty of exercise, allowing them to run in the fields after the corn has been gathered in the fall, and do not aim to feed them any grain unless the snow and sleet covers up the stocks. They then have a small allowance of sheaf oats and clover hay, and if very cold, a little corn. When springtime comes they go out onto bluegrass pasture. Here I would say, in absence of plenty of bluegrass, would advise sowing some rye in the fall to be used for early spring pasture. In the pasture they have their young unmolested. I say unmolested—of course, a careful shepherd will always need to visit his flock and keep a close watch during lambing time—to see that everything is all right, and to see that some poor little twin lamb does not get lost from its mother long enough that she will not own it later in the day. Now, when the lambs are a couple of weeks old we mark and trim them. Cut their tails with a sharp knife as close a possible, putting a little raw linseed oil, mixed with a few drops of carbolic acid, on the wound. The acid will keep the flies away. If, perchance, flies should get into your lambs use a little gasoline to kill the maggots. It is not so severe as turpentine. Afterwards paint well with pine tar. If I wanted my lambs to "grow big," I would commence to feed them some threshed oats. I would fence off one or two fence corners where the lambs could creep through and the old ewes could not, and in low troughs, with a board running lengthwise high enough so the lambs could not get into the trough with their feet, would put a little threshed oats (a very little at first), and keep increasing it as the lambs grow older and can eat more. If you want to get your lambs ready for market as soon as possible add some corn to the oats.

Of course, one can turn lambs, rams and ewes all out into the woods and let them take care of themselves and you will have (if the dogs don't catch them) some sheep left, but you won't raise any 100 per cent of lambs, nor top the market when you get ready to sell. Shearing time comes and you undertake the job yourself. Don't do it. Give some fellow who knows how and who can save a pound of wool more to the fleece than you can—give him eight cents per head to shear and tie the wool up for you. Caution him particularly to throw out all dirty tags. (I should have mentioned before a good and wise plan is to tag the ewes quite early in the spring before the young grass starts. One can by this way save another one half pound of wool.) You cannot cheat a wool buyer more than once by selling him dirt.

A couple of weeks after shearing, if it is possible, the sheep should be dipped; but if one has only a small flock and not all the arrangements for dipping the older sheep, he can dip the lambs in a barrel. If there are any ticks or lice this will remove them. Almost any of the sheep dips on the market will answer. The hot sun of summer comes and our sheep need the shade of some tree or temporary shed. I think sheep suffer more from lack of shade than from exposure to the cold. Nature has provided them with a blanket, but not with an umbrella.

About three weeks after we have harvested our oats we are ready to turn our sheep onto our rape and clover fields, the same piece of ground from which our oats were cut, rape, oats and clover all having been sowed at the same time in the early spring.

We do not turn them into the rape fields and leave them at first, but work them up to it gradually—say four or five days. Nor do we allow them to go

into the field for the first time while the dew is on the ground. But after the sheep have become accustomed to eating and sort of get "filled up," as it were, then we have never had any serious results from allowing them the free run of the field both day and night. If one does not stock his rape fields too heavily they will produce a wonderful amount of feed until the heavy frosts come.

We are now feeding about 600 western sheep which were purchased in Chicago on the 1st of September. They were brought home and put on 50 acres of rape and clover (divided into two fields, 20 and 30 acres), first in one field and then in the other, and the 50 acres lasted the 600 sheep about five weeks, putting on a gain of 13 pounds per sheep over Chicago weight. This would mean at four cents per pound, \$312, or a little over five dollars per acre. We had previously thrashed an average of 55 bushels of oats off the 50 acres. Sometimes we wean our lambs and put them into the corn fields about the time corn is in roasting ears. They will not destroy the corn if it is not blown down, and they will do well. But one can not turn old sheep into a corn field.

In conclusion I will say, try a small flock of sheep on your farm. Encourage the boys and let them have a few sheep, and when they have learned by experience, add more, or by keeping the ewe lambs you can soon grow a flock of any size you wish. When you get started stay by it and don't sell out when sheep are down to the lowest notch (and start in again when high) or when you have hard luck and lose part of your lambs from the dreaded stomach worm, but stay by it, and I am satisfied you will find that as a part of your business it is more profitable than most of the other departments of the farm.

SHEEP BREEDING.

[J. B. Townsend.]

Where sheep originated is a question difficult to answer. They are the first of animals domesticated by man, and reasonably so, since they supply the two principal wants of the barbarian, food and clothing. They are found in every inhabited country, not entirely savage, from the arctic to the torrid zone. Notwithstanding the fact that sheep are among the principal sources of wealth of all people, it is only among enlightened nations that they have reached their highest development.

Many generations of man have come and gone, who seemed to think that this innocent, patient little animal friend was necessary to human existence as the air they breathed, and indeed it furnished food and clothing at a time when other things were not to be had. How is it now in our time and generation? We, as a people, generally have parted company with this old companion and friend. We find its flesh in the butchers stall, and its wool in the furnishing stores, but those who eat the chops, and wear the fine fabrics, seldom give a passing thought of the little creatures that furnished them, or converted them from the grass of the dale and hilltop.

We have only to turn back the pages of the past a few years where we can read how the good old grandmothers used to clip, card and spin, and even weave into cloth and make into garments the wool grown on their own home lands, knit all stockings worn by large families, while now and then a lamb or sheep was slain and dressed for the same family's food, thus furnishing two of the great essentials of life.

Having been kindly invited to give my experience in breeding and caring for sheep I feel I must offer an apology or explanation, for I fear I will be a sore disappointment. You may expect I can give you experience in the fancy breeding, or in the large ranching and woolgrowing business. In either of these branches I have not had the least experience. My experience with sheep is, and always has been, in the modest way of raising a few good common ones for the purpose of converting waste grasses and weeds into wool and mutton, thereby getting some return from much rubbish that would

have to be burned or otherwise destroyed and practically lost. So not to be presumptions, I must confine myself only along this line. Some ten years ago I bought a few good large Cotswolds weighing about 200 pounds each, with lambs by their sides, paying \$5 per head for sheep and lambs. One had two fine ewe lambs, so the mother and lambs cost me \$15, a good price I thought then. This was the last week in June. The following January and February lambs were dropped, and the earliest bucks were sold for "Easter lambs" at \$4 apiece, weighing from 40 to 50 pounds each, lighter ones delivered later on, about the time of new peas. This price and custom I have always kept up. The mother sheep averaged about 13 pounds of wool the first of June, while the 15-months lambs varied from 15 to 20½ pounds each, for which I received 20 cents per pounds unwashed. I still receive 20 cents for wool, but for a few years only received 10 cents, and this reminds me of a little story I will relate farther on.

When sheep are left to their natural inclinations, they seem to bring forth their young in February, as a rule, but scatter along some from December to June, and even later. The period of gestation seems to be about 155 days. When lambs are born in winter time it is very important that they should have a dry, warm brood pen, but after two days they should be put out in an airy pen connected with a sunny yard, and other expecting ewes put in the brood pen.

It is a good plan to trim a little of the wool from near the udder so the little one can readily find the teat, for it has more vitality during the first ten minutes of its life than ever after until it has filled its stomach. It is not always best to try to assist the little one by holding it up, as most of them seem to object to it.

If perchance lambs have got chilled before nursing, a very good way to revive them is to fill a gallon jug with hot water, wrap a sack around it and put it in a corn basket, then put the lambs in the basket and throw a horse blanket over all. They will soon revive and commence running around the jug and soon are strong enough to put beside their mother.

Feeding sheep for breeding purposes should be done carefully. If they have fall grass, cornstalks, etc., I would not feed any grain at all until lambs are dropped; then I would give each one about two pounds of carrots and a pint of oats twice each day for the first week, and after that all she wants to eat of shelled corn, whole oats, carrots, buttermilk, dishwater, pumpkins, cabbage leaves and stumps, potato and apple parings, straw, beets and cornstalks, with plenty of water, especially if there is no snow. There is no manner of use of grinding any kind of grain for sheep. Very often some one will tell you strange things—something they know nothing about. Some men will tell you can let sheep into a cornfield and they will only eat up the weeds and clean up the vines, etc., but will not eat the corn. If any one tells you that don't tell him he lies, but ask him what boys would do if they were sent into a patch of ripe melons to trim out a few big weeds.

Sheep will certainly devour plaintains and morning glories with a relish, and in fact nearly all weeds excepting thistles and cockle burrs. I mow weeds and grass in the roads, on and around the farm and fence lines, rake them up and stack in a suitable place, and throw them out in winter on the snow or bare ground. They seem to like them and devour them greedily. If lambs are not born until grass time, and grass is good, no grain need ever be fed. A ewe is generally good for breeding as long as her teeth are good, and that is from six to eight years. Even at that age she will sell well to the butcher, though very often she is objectionably fat. A good practice is to cull well every season, after lambs have been sold or weaned. Even in a small flock there are always some that are not desirable. Some bring poor and misshapen lambs, others are not good mothers, and again others after a few years have such large teats that the lambs can hardly nurse, and still others may lose their udders from fever or other cause. All with such defects should have note made of, and turned to the shambols as soon as in good flesh. In this way you can keep a small flock looking well, of uniform size and desirable form, making it a pleasure to look at as well as increasing its profit. Such a flock can be handled with profit and pleasure. Sheep do

not tear down and root up pens, and make mudholes as hogs do, and if perchance a gate is left open or a bar down and they get out, a shrill whistle will generally bring them back. They will not run away if they get out on the road, and will rarely leave the fold at night, but at the earliest break of day will go to the dawy pasture and return to sheds in the heated part of day, going out again toward evening and remaining as long as it is light. For these reasons no matter where the pasture is, there should be a lane or runway unobstructed from there to yard and shed, for when sheep get startled, even for an imaginary cause, they run headlong and recklessly toward their shelter, as also they do from approaching storms; therefore if they were shut off they would become frantic and plunge through fences even to the peril of their lives, but if there is a clear passage and they know it they will never leave it. They are naturally very timid—the outcropping of their old nature when they lived ever on the alert of wild beasts that infested the mountains and plains. It is not necessary to have expensive buildings for shelter; low sheds are good, rising to the south or east and boarded up about four feet in front, leaving remaining space open. No weather is too cold for them in such a shed, but the roof should not leak rain or snow. There is no use of a floor summer or winter. They will stay in it the greater part of the day summer and they love to rest their noses on the cool ground. In September or October I clean up a load of chaff and straw and put it at least a foot deep in the shed, and no more bedding will be necessary during the winter. With the summer's droppings, the straw and the winter's accumulation, there will be some fine fertilizing material, none of it having been wasted, while a good bed is furnished all winter without the trouble of cleaning and rebedding.

It is not best to shear very early and a few hot days in May will not make them suffer as much with their wool on as a few cold and wet days in the same month will, if shorn. About the first of June is a good average time, as at that time warm weather can be expected, and the wool has raised from the skin, making it easy to shear. The science of shearing I have never learned, but I always "got there" somehow. Some sheep will stand up on a barn floor and scarcely move; others have to be tied like a calf, and still others struggle so they have to be tied by one front and hind foot and laid down on a bench. One should be careful about clipping the hide, as that will make them struggle. Speaking of shearing reminds me of the story I promised. It is an old campaign story, and while this is no place for a political campaign yarn it will do no harm, as the issue that brought out the story did not seem to be the paramount one in the recent election. An old man with eyes looking suspicious of tears was busily engaged in clipping a sheep near the roadside when there chanced to pass a stranger who, out of curiosity, reined up and accosted the old man in this way: "Good morning, neighbor," says he, "I see you are clipping but are going at it wrong." "How so," says the old man, "I'm getting the fleece off." "Yes," says the stranger, "you are getting it off, but you commence at the wrong end. I have sheared thousands myself and always commenced at the head end, and there is where you are wrong." "I know," said the old man, with a withering smile, "but I am obliged to commence at the other end." "If it is not impertinent," said the stranger, "may I ask you your reason for doing so." "You may ask," said the old man, "and I have no objection to telling you my reason, and it is this: I used to vote the republican ticket and always got 20 cents for my wool; then I went and voted for Cleveland and had to sell my wool for 10 cents, and have always had to begin shearing at the hind end ever since, for I haven't the cheek to look a sheep in the face."

At the time of the shearing keep a sharp knife at hand and examine each foot. Most of them will have the hoof grown under. This should be pared off, as dirt will get under and make the foot sore. (On stony land this will not occur.) It is very easily done. Also have some good pine tar at hand and with a soft swab put some up each nostril. They will not object to it and it will set up a good sneezing.

One word about parasites, and that only about ticks. Excuse my homely name for them; you all know what a tick is—it is a big fat parasite. It lives on the skin under the wool. It looks a little like a spider. You don't have

to put him under a powerful glass to see him. He is as big as a small raisin and has about the same bony structure. Put him on a block and put your heel on him and he will snap like a torpedo. Now I will tell you how to exterminate. (Is there any sheep dip agent present?) I have no patent on my remedy. It is simply this: Let the tick alone; don't go after him. Let the sheep at all times be well fed. If grass and fall feed is not good, feed something else. At all events keep the sheep fat. It is much cheaper than to keep them poor. If some are old or not thrifty, put them off. By keeping all sheep fat ticks can not exist, as a fat sheep constantly throws out so much oil on the wool, close to the hide, that ticks can not exist, and being great gluttons will soon die of starvation, but on a poor sheep, with dry, lifeless, light wool, they will become so numerous as to almost consume her.

As to profit on sheep, along the line I am engaged in, I think I am satisfied. No great profit, but a paying little side show. Company on the farm, handsome, clean little creatures, humanity's friends.

One thing I should have mentioned further back; that is, where small flocks are kept, I would prefer Shropshire or Cotswold.

Sheep upon farms suited to them are very profitable, but however suitable the farm, the profits will be in direct proportion to the intelligent care and attention the animals receive.

MISCELLANEOUS DEPARTMENT.

ADDRESS.

[By W. H. Stevenson, Jacksonville, Ill., at the Morgan County Farmers' Institute.]

It affords me great pleasure on this occasion, my fellow farmers, to congratulate you upon the widespread prosperity enjoyed by the agricultural interests of our country.

We have assembled today—the earnest, thoughtful farmers from all parts of the county, conscious, in a measure at least, of our lack of knowledge, our weakness and our need, in the hope that by contact with each other, by the exchange of practical ideas and experiences and by a careful investigation of new ways and advanced methods we may greatly increase our practical working knowledge, have our noble ambitions strengthened, the scope of our ideas broadened and our education made more complete and helpful.

We have come because we believe in the dignity and the worth of our vocation. We believe that no other calling demands greater tribute of knowledge and varied resources to insure success, and as thinking business farmers, striving to establish our work upon the sure foundation of trained hands and brains, we seek the best, the most potent help for intelligent work in the future.

We realize, in this day of sharp and pitiless competition, that every energy must be bent to any kind of work that is taken up. Therefore, we know that we need, in all of their fullness, the better business methods, the expansion of ideas, and the growth in knowledge which the present institute movement make it possible for every farmer in the State to secure if he really desires to do so.

We are not here to pass resolutions embodying attacks upon the management of State or national affairs. We are not here in the capacity of grumblers, fault finders, extremists or rainbow chasers, seeking to tear down established institutions and increase the various discontented elements of society. But we are here as representative, progressive farmers intensely alive to the fact that each one of us, must of necessity, have within himself the elements which make for success or failure and that for successful, gratifying results of our efforts we must depend far more upon our skill and good management as farmers than upon plans which have for their object influence along legislative lines.

We are here in an earnest endeavor to prepare for the future. In the past we have slipped; we have fallen; we have been in the dark over rough and thorny pathways only at last to find ourselves face to face with failure and disappointment. Do we not understand that we failed because we were not fully equipped for successful farm management? Somewhere along the line we lacked power as a student, a thinker, a planter—either in the rearing or feeding of stock, the proper construction of buildings, in a knowledge of the chemistry and the peculiar characteristics of soil, the best cultivation and care of crops, the most practical methods of destroying weeds and insects, the principles of farm machinery, the economical management of labor or the shifting demands of the markets and the preparation of products to meet those demands.

The day is here when the talents and abilities of the farmer are at all times drawn upon to the utmost limit and no longer can he who has failed in other departments of endeavor hope to achieve a competency in agricultural pursuits. There are men, strong men, who are eminently successful in their farming operations, but as a whole the farming industry in Illinois is not yet developed. The average yield of our corn, wheat and oats; the low average grade of our flocks and herds; the impoverished soil of our farms from successive crops have been removed year after year; the indifferent results obtained from average stock feeding operations bear unmistakable witness of the fact that the farmers of the State need to value more highly and make better use of the opportunities for gaining knowledge, which are furnished in such meetings as this here today and in the agricultural college which is now so well equipped for effective work through splendid courses of study, instructive bulletins and capable institute instructors.

The country does not call for more professional men, nor for more loyal and patriotic men to defend her flag and sacred institutions; but every exhausted, worn out farm; every scrub animal; every unproductive pasture and every average crop emphasizes the fact that our nation lacks men among her rural population who are guided by a spirit of investigation, inquiry and experiment; men who are educated for their life work as highly as they should be. These men do not bring to their assistance the same high training and thorough preparation which is a very part of the successful commercial, manufacturing and professional leaders of the present time.

Patriotic, progressive farmers then have a mission in every community. To them, in part at least, is entrusted the noble work of leading their fellow farmers into better and more intelligent methods and of awakening in them a desire to enter into the fuller, freer and more prosperous life which is the unflinching reward of patient thought and study. We, the members of the Farmers' institute, are gathered here at this time with an earnest desire to guard well this important trust. We stand ready and willing to aid all for an advance movement. We are anxious to discard that which is obsolete and not helpful; to cleave to that which makes for progress and success and to test that which is full of promise of better things for the day to come.

Existing conditions in Illinois agriculture prove that many all-important problems demand important and careful attention.

The wastes of the farm and how to prevent them is the most important economic question before the Illinois farmer. So great are the needless wastes on our farms, amounting to millions of dollars annually, that if saved they would bring to agriculture profits enjoyed by few other lines of business. When the vast plains of Illinois were first plowed the fields were fertile and yielded a handsome profit in spite of careless cultivation and great waste. But in these later days, with the same wasteful methods in vogue almost generally, the fertility is fast vanishing. Although Illinois is in the great corn belt the average yield of corn in Maine is nearly five bushels per acre more than in Illinois. What an important lesson is this condition of present day farming. A few who have noted with alarm that their fields were constantly growing less productive have turned from the wasteful customs and practices of our pioneer agriculture and are rapidly taking up more scientific and exact methods, but the majority sow and reap year after year, content ever to rob the land of its power to grow crops for the increasing millions of population. This question of dissipated fertility is a most serious one. It is impossible to estimate in dollars and cents the annual losses from this source, but we offer a single example which doubtless will serve as a fair illustration of the tremendous losses in many instances. The experiment station reports that the yield of corn on a piece of land where corn had been grown continuously for 23 consecutive years was 21 bushels per acre, while the yield on the same kind of land under proper farm management was 85 bushels per acre. This waste and loss occurs not only in corn production, but it is also a factor in all crops and operations of the farm; the direct result of careless farming and ignorance regarding the fundamental principles of soil management. Our so-called "grain farmers" sell their corn and oats from the farm, feed little or no stock and raise no clover. The result is that the fertile soils of Illinois are subjected to tremendous losses of plant food and the farmer soon realizes

that he must feed steers, hogs and cows; have more clover and better rotations or buy commercial fertilizers. The fertility in the soil is the farmer's capital stock. His prosperity depends upon the plant food in the soil, therefore it is all important that effective methods be employed to prevent these needless losses of fertility so apparent in all quarters.

There are losses in the stock business. They can be attributed in part to the indifference of a large number of farmers regarding stock-growing. Instead of well-bred, improved stock, through which to market the grain, grasses and forage of the farm, the scrub too often stands at the feed rack. Not only is the scrub a continual source of financial loss, but he is also a serious drawback and a menace to the live stock interests of our country. Because of his presence herds and flocks which should be constantly improving to meet increasing exacting demands of the breeder and the butcher's block are steadily deteriorating. Have I criticised too severely present day farmers and their methods? I trust not. My purpose has been to show that there are tremendous possibilities in agriculture. The dark clouds of former days are rolling away. A new era, rich in promise of better things for those who study their business, understand it and save the needless losses upon the farm has already come.

MECHANICS ON THE FARM.

[Read by O. A. Lindel of Sibley, at Ford County Farmers' Institute, January 24th].

The subject of "Mechanics on the Farm," as I will endeavor to treat it, does not apply, as some would naturally suppose, to farm machinery, excepting as relating to care and repair of same, but to the farmer as a mechanic—or as his own carpenter and blacksmith.

Farm machinery is so thoroughly discussed in farm papers, at farmers' institutes and elsewhere that all farmers, at least all who try to keep up with the times, are perfectly familiar with even the very latest improvements and inventions.

The farmer realizes that in order to produce the best results in his farming he must have the best of machinery, and so he gets it, even though he sometimes must go in debt to secure it.

The care of farm tools and machinery, after the farmer has come into possession of it, has also been discussed at great length, so I may not be able to say anything new along that line, but the subject is of so much importance that a few words as a sort of a reminder may not be out of the way.

After a man has purchased high priced tools it seems as though he uses very poor judgment when he lets them stand out in the sun and rain to rust and rot from the time he is done using them one season until he needs them again the next. Yet how many farmers do this very thing?

NEGLECT OF MACHINERY.

A plow is bought—nice, bright lay and good solid beam and handles. It is taken out to the field, the field plowed and the plow left at the end of the last furrow. A harrow is used, and after its work is done is left wherever the job was completed. The cornplanter generally receives better treatment, but occasionally it also is seen standing in the field after planting is done.

The cultivator the farmer evidently does not think so much of as he does of his planter, for I have seen cultivators stand in the field long after corn was laid by, and sometimes long after the corn was husked. The oats seeder is sometimes left out in the field with no better cover than a convenient tree, and the binder, that precious piece of machinery that costs more than any other the average farmer has, and that is of so much importance in the saving of his grain, is left standing where the last bundle fell until way late in the winter.

The disc, mower, hay-rake, wagons and all other tools receive the same careless treatment, and what is the result? All the paint and varnish is worn off by action of the elements, the iron work rusted and weakened and the woodwork rotted.

MUST BE REPAIRED.

The next time the tools are to be used they must be hauled to town, and the blacksmith polishes up the plow shares, the plow shovels, etc., grinding away several years' wear in the process.

The wagonmaker puts in the necessary wood repairs; that is, all that seem necessary at the time, and the farmer takes his tools back home and begins his work, possibly several days behind time already on account of waiting for his repairs. The chances are that he will have several break-downs, giving the blacksmith and wagonmaker more work and causing more delays and more expense before his tools are in proper shape to do the work required of them. How can this waste of time and money be prevented?

BUILD A TOOL HOUSE.

The answer is: By building a good substantial tool house, large enough to hold all the tools the farmer has. Have it in a high place, so that no water will run into it, and make the roof and sides tight so as to exclude rain and snow. Then, after you have your tool house, make a practice of putting your tools back into it.

CLEAN THE TOOLS.

Do not wait a month, a week, nor a single day, but clean the tools up as well as you can, grease all bright parts, and put each tool in its place immediately after you are through using it. Then, when a rainy day comes and you can do nothing else, go into your tool shed and finish cleaning up the tools you are done with for the season, tighten up all loose bolts, and, if any repairing is necessary, attend to it, and if any tool has been used for some time and the paint is worn off, get some new paint of suitable color, even red barn paint is better than none at all, and paint everything but the bright parts. If this is done you will find that your tools will last much longer, give better service and cause less delay and expense than by the old careless way.

REPAIR EQUIPMENT.

However, in spite of the best of care, farm tools, like everything else, will wear out in time and need repairing, and the farmer should be so equipped with tools and in mechanical ingenuity as to be able at least to make all minor repairs right at home. Let us see how well the average farmer is fixed for work of this kind.

THE USUAL OUTFIT.

Of the many farms that I have visited in the last six or eight years, I have never seen but two farmers who had buildings exclusively set apart for shops and equipped with tools enough to make ordinary repairs on farm implements. The average farmer's outfit of tools generally consists of an old rusty saw that you could scarcely push through the crossway of a common fence board in a half hour's time; a piece of hatchet or ax and possibly some sort of a hammer, a monkey wrench that is sadly out of joint on account of having been required to do part of the work of the poor hammer or of a sledge; if he has any kind of a plane you will find it in such condition that it will work just as well upside down as it will if used in the proper way.

NOT IN SHAPE.

You will find a brace and a few bits—that could be used for almost anything else but boring holes—and possibly an old worn-out chisel. These are about all the tools the farmer thinks he needs, and he does not try to keep

them in shape for work, so if, when he is out in the field at work, plowing for instance, and a singletree breaks, with nothing on hand to take its place, he is obliged to leave his work, hitch up to his wagon and drive three or four miles to town to buy or have made a new singletree. He goes out to harrow and perhaps the evener breaks—just a common piece of 2x6 hard wood with a few holes in it—still, on account of not being able to replace it at home, it means another trip to town and the loss of more valuable time.

LOSING TIME.

When planting time is on hand he finds a bolt missing from his planter and is obliged to make still another trip to town to replace it. When harvest time comes he hitches to the binder and begins to cut his oats, but barely gets started when he discovers that something is wrong and that his machine will not bind, but to save his life he can not find out, even with the help of his neighbor, just what the trouble is. So he has to lose another half day going to town after an expert, who comes out and with a few turns of a wrench adjusts some small though important part, tells the farmer to go ahead and the binder does its work. The whole thing was so simple that the farmer feels like kicking himself all over the field for not knowing how to do it himself.

TAKE MACHINE TO PIECES.

It is the same story the year round with other pieces of machinery, and I might name a long list of various kinds of accidents which happen during the farmer's busy time and cause him to waste time and money, besides getting behind with his work. I believe that every farmer should make himself so familiar with every piece of machinery he uses that he can at least tell why it does not do its work as it should, and what the trouble is if anything gets out of order. When a new implement is bought, let him examine every part of it—take it all to pieces and put it together again if necessary, but by all means learn all about the machine and its workings, so that if anything does happen to it in the busy season he will know how to remedy it without the loss of very much time. Every well regulated farm should have a building or a part of a building to be used for nothing else but a shop.

WELL SPENT MONEY.

It should be as well built and as well filled with good tools as the farmer's purse will allow—and right here let me say that any money spent along this line will be well spent, and in the end will save the farmer many times the total amount expended.

THE TOOL SHOP.

The farmer's shop should be at least 8x16 feet, and should be built by itself, but for convenience and economy the implement house may form one side of the shop with a door connecting the two. The only advantage in having the shed off by itself is that in the winter time, when it will be used the most, a stove could be put in without so much risk. If possible the shop should be on the south side of the tool house, and should have a half window or two over the bench to admit light. The bench should be at least two feet wide by about 12 feet long, to be large enough to accommodate ordinary work, and the under side of it to economize space, might be filled with a number of drawers, in which to keep nails, screws, bolts, taps, washers, rivets, small parts of machinery and harness, etc.

THE TOOLS NEEDED.

Fastened to the bench should be a good heavy iron vice, strong enough to hold anything that may be required of it. The balance of the outfit should consist of a good cross cut saw, a good rip saw, two or three planes, a brace and at least a half dozen bits, and a half dozen drills of various sizes, a heavy

claw hammer, a riveting hammer, a hand axe, a drawing knife, a good grind-stone with foot power, to spare the boy if you wish to keep him on the farm; an oil stone, two or three files, about four wood chisels, two cold chisels, a punch, a screw driver, a square, a level, a tape line and a couple of good monkey wrenches. To this might be added a number of other inexpensive tools, such as a compass, rule, wire cutter, pliers, try square, etc., that are handy to have but are not essential.

COST ONLY \$25.

The list of tools may vary to suit the taste and individual needs of the farmer who is to use them, and if he gets to be an expert in handling tools he may probably make a few additions to the list from time to time. He might wish to add a forge, an anvil and other blacksmith tools, which would help make the shop more complete, and if he has had enough experience he could during the winter months and other leisure time do a great deal of work for his neighbors that would bring him in many a nickel or dime, especially if he lives some distance from any regular shop. The whole list of tools first named need not cost over \$25, and will pay for themselves by doing away with the frequent trips to town and the consequent loss of time as well as the expense.

LUMBER AND SUPPLIES.

In addition to these tools the farmer should keep on hand a few pieces of hard lumber of various widths and thicknesses, some plain neck yokes and single trees and double trees, materials for tongues, reaches and a few other things that might come in handy in case something breaks down. He should save all the sound wood parts of old worn out machinery, take out all the bolts, wrought iron rods, etc., oil and put away each kind in its place so he can put his hand on what he wants when needed. It does not pay to sell wrought iron rods, bolts, etc., to junk dealers for 20 cents per 100 pounds, and go to the hardware store and buy bolts at 5 cents each or at the rate of about \$35 or \$40 per cwt.

WHAT CAN BE DONE.

Now the many things that the farmer can make and the many uses to which he can put a good set of tools are too numerous to mention, and are not confined alone to the repairing of his farm machinery, harness, etc., but with good sharp tools he can build his own corn cribs, granaries, tool shed, and in fact anything that he wants just as well with a little care and perseverance as can the ordinary carpenter.

CAN DO CARPENTER WORK.

He can add a great many comforts and conveniences in and about the house in the way of sinks, pantry shelves, flower stands, fuel boxes, etc. If a door gets out of order he can refit it and keep out the cold. He can make screen doors and screen window frames to keep out the flies and mosquitos which otherwise annoy him. With a nice little hammer he can help his wife put down the carpet, hang the window curtains and pictures and help make the home attractive.

When he has nothing else to do he can build a swing and make little wagons and a little wheelbarrow and other things of the kind to give pleasure to the children, and at the same time keep himself in practice.

LET BOYS USE TOOLS.

Let the boy 12 or 14 years old or over have access to the tools and shop. Let him make anything that he may think of, and he will soon learn how to handle the different kinds of tools and make himself useful.

It will also serve to keep him out of mischief during his idle time, and perhaps keep him at home and away from bad company. To most boys it would be a great treat to be allowed to use nice bright tools—it would help to vary the monotony of boy life on the farm, and make them more contented and happy.

CULTIVATE MECHANICS.

The farmer by cultivating his mechanical eye would soon learn to use better taste in placing and arranging his various farm buildings in relation to each other. He would try and have every thing square with the world, and especially all his other buildings square with his house. He would see to it that his fences were built in a straight line and at right angles to each other.

LAYING OUT FIELDS.

In laying out his different fields he would have one side as long as the other, and the ends square so that there would be no point rows in his corn fields to cause unnecessary driving when it comes to cultivating, and to hurt his mechanical eye in looking at them. Of course a farm with open ditches running diagonally through it is another thing, and allowance must be made in such cases, but oftentimes the pastures can be so located as to take up the worst side of the ditch and the garden, potato patch, etc., can take up some of the triangular pieces, thus leaving the other fields square.

I imagine I hear some one say that it takes money to build a tool house and shop and fit it up as I have described. That is very true, but it takes much more money to buy implements and machinery.

A VIVID CONTRAST.

I can show you a man who has used the same binder for 12 years, while only across the road from him lives a man who has used two binders and a part of the third in the same length of time. The binders were of the same grade and cost about \$100 each. The first man had an excellent tool shed and made a practice of putting his tools into it and keeping them in first-class repair.

The other man left his binders out in the field or in the barn yard, with no shelter of any kind. The first man cut a great many more acres of oats with his machine, yet it cost him only half as much in the same length of time as it did his neighbor.

CAN SAVE HALF.

If properly housing and caring for a binder will save half its cost, I believe the same proportion can be saved on all other farm tools, so that if a farmer has \$600 invested in implements which without care would last but six years and which by having a tool shed to shelter them and a shop and tools with which to keep them in good repair would last 12 years, or twice as long, at a cost of but \$50 per year, he is saving \$50 each year.

COST OF TOOL SHED.

Now, a tool shed 16x40 feet can be built of good material at a cost of about \$60, and if the shop is built in connection with it both can be put up for \$75, to which add the \$25 for tools for the shop, making a total cost of preparing to properly care for all implements of but \$100.

With ordinary care the buildings and tools should last at least 12 years, so you see the farmer would pay for them in two years and save money on his farm implements.

ANY MAN CAN LEARN.

There is no use in any man saying he can not learn how to use tools—because he can. Any one with sufficient intelligence to manage a farm can certainly with a little perseverance learn to manage a saw and hammer and the few other things that go with them. Taking everything into consideration there is no doubt but that the farmer would be greatly benefited in many ways by giving some of his time to the study of mechanics, for, as has already been shown, he can add to the pleasure and happiness of his family, make his home more convenient and attractive, improve his farm, save money and help to develop and broaden his mind.

THE STUDY OF BIRDS.

[Read by Mrs. John V. Farwell, Jr., before the Farmers' Institute at Millburn, Lake Co., Ill.]

Of the earlier part of my life, 16 years were spent upon a farm, and I still have a vivid recollection of the difficulties which beset the farmer. It was a rare year when crops really matured as they should, and when garden fruits and vegetables bore any resemblance to the illustrations in the seed catalogues. Some years we had floods and some years droughts, but the two-hydra-headed monsters we were always fighting, wet years and dry, were weeds and insects.

It does seem as if each plant had its special antagonist in the insect world, and from time to time new insects have appeared, as if the old were not quite enough of themselves to try the souls of men. How much weeds lessen the profits of the farmer can never be estimated, I suppose, but leading entomologists assert that insects annually cause a loss of at least \$200,000,000 to the agricultural interests of this country. Surely any means of reducing such a great loss as this is worthy of consideration, and it is a sound business principle that unless losses are reduced to a minimum profits can hardly be expected to increase. The day is past when either a business man or a farmer can afford to be ignorant of any fact, small or great, which may have a bearing on his success. One of the chief expenses of the farmer is the labor he expends on keeping in check the ravages of noxious insects. With all his efforts he can do little against an army of creatures capable of increasing at the rate of a million in a single day.

But he has a powerful friend and ally in the bird, how effective a one we do not realize unless we give the subject some thought. If you walk through your orchard and out to the woods and pastures some morning early in May, and if your eyes and ears are open to what is going on in the bird life about you, you will be surprised to find how full the world is of these beautiful creatures, and how very busy they are. Through the air the barn swallows and chimney swifts are coursing, chasing gnats and mosquitoes; up in the trees the branches are full of vireos and warblers, flitting from twig to twig; on the trunks you will see woodpeckers and nuthatches hunting conscientiously for some lurking insect; on the ground are the robins, the flickers, the meadow larks, busy in their search for worms; all working harder and accomplishing more in the extermination of insects in a single hour than we could do in a year.

Birds eat an amount of food out of all proportion to their size. One of the first experiments in the capacity of a young bird to eat was made in 1858, when a two-weeks old robin was the subject of study. It was found that this small creature would eat 68 worms in one day, which, if laid in a line would measure 14 feet, and he seemed to enjoy it and suffered no inconvenient dyspeptic pains afterward. Young birds are very partial to insect food, preferring it to grains and seeds, so that many species which ordinarily are seed eaters will feed their young almost exclusively on insects.

It would seem to be a simple matter to ascertain which birds destroy the most insects, but, like many other matters which seem to be simple, it is not so. Birds eat a great variety of food, and in considering their value to the

farmer one must take into account the fact that, though a certain species may do some harm, the good which it does may counterbalance it, or vice versa. Also that the examination of a few specimens does not necessarily prove anything. One must remember also that there are beneficial insects as well as harmful ones, and one has to know which preponderate in the bird's diet. There are certain beetles, called predaceous beetles, which are of use to the farmer, because they destroy other kinds of beetles, which do a great deal of damage, and there are certain spiders which eat harmful kinds of spiders. So that a bird which eats these useful insects is not as valuable as one which eats canker worms or weevils. It is evident, therefore, that only an expert entomologist or student of insects and their habits, judging from the stomachs of a large number of birds killed at various times in the year, can come to any definite and reliable conclusion. Private individuals have found the subject too complicated for them, so that the whole matter has now been placed where it belongs—in the hands of the government, aided by some of the state universities.

Fifteen years ago the government established what is now known as the department of biological survey, a bureau of investigation of all animal life. In these fifteen years this department has examined the stomachs of 14,000 birds. This seems a great slaughter, considered collectively, but when one thinks of the slaughter that has been going on among the birds during this century, largely through ignorance of their value, one realizes that the few thousands must be sacrificed to save the many millions.

Just stop for a minute to consider how the birds have been killed of in this broad country of ours. When Audubon, our pioneer bird student, passed along the wharves of New Orleans in 1805, he saw schooner after schooner loaded in bulk with wild passenger pigeons, which were selling at one cent apiece. The accounts of the vast numbers of these birds, which would pass in great flights over our land, are wonderful to read. Even as late as 1878 there was an immense colony of them covering 100,000 acres of land near Petoskey, Mich., from which it was estimated that over 1,500,000 birds were shipped. Now it is reported in the bird magazines as a rare occurrence if an observer sees a small flock of passenger pigeons.

Birds have been killed by the million in order to adorn the hats and bonnets of American women. One species of heron, whose beautiful plumes were much in demand, is now practically extinct. A Florida plume hunter, who shot for Northern markets, boasted that he had killed 300 herons in one afternoon. Another, with his companions, had shot 130,000 in a single season. The women of this country, by their thoughtlessness—one does not like to call it hard-heartedness—have caused the death of countless birds, each one which, if it had lived, would have been not only a creature to make life brighter with its beauty or its song, but a friend of inestimable value to the agriculturist.

The Illinois laws, however, are now very strict in this matter, and allow neither bird killing nor the collections of eggs or stuffed birds unless the person making the collection has a special license from the State. All children can be taught to love birds, not to destroy them, and if parents will only teach their children to watch and protect the birds, the small boy with a sling shot will soon be a thing of the past.

The department of biological survey has made a special study of what birds have been considered the species of doubtful value. The verdict resulting from all these investigations is that six of the hawks and the English sparrow are the only birds not worthy of the protection of the farmer. Most hawks and all owls are too valuable to be spared because of their destroying field mice, moles, etc., but there are two hawks, well known in Illinois, the Cooper's and the Sharp Shinned, which are great robbers of the poultry yard. Both these hawks fly rather low, swooping sidewise at the chicken before it has a chance to escape. They look much alike, except that the Cooper's hawk is the larger. They are slaty gray on the back, the tail with blackish cross bars and a whitish tip, under parts barred with white and pale reddish brown. They are quiet birds and rarely utter any sound. I have described them because I think we ought to know how to distinguish them from the harmless species.

The English sparrow is a pest, a fighter of our native song birds, and; while it does eat some insects, the greater part of its food is obtained from pickings, and it is, therefore, of little or no value to man. Its introduction to this country is an example of how much harm can be done by ignorance.

It has been a surprise to many to find that the department of biological survey has given a verdict in favor of the crow. Its animal food was found to consist of beetles, cutworms, grasshoppers and other insects, frogs and toads, and some small snakes. Toads and small snakes are both destroyers of insects, and, therefore, very useful. Of vegetable matter in the stomachs, the larger part was young corn, of which there is no denying the fact that crows pull up a good deal. Many devices to protect young corn from the depredations of crows have been tried, the most successful being the tarring of the corn. The seed can be poured into tar oil, taken out at once and tolled in wood ashes. Crows eat very little ripe corn. Insect food composed 26 per cent of the contents of the crows' stomachs, and several hundred different kinds of insects were found, mostly harmful species. Crows have one curious habit, which is shared by some other species, of ejecting from the bill certain indigestible portions of their food. These food pellets have been examined and found to contain the seeds of elm, dogwood, sorghum, red cedar, etc., and, as the seeds are not injured by this process, the crow is no doubt the innocent means of planting many of our wild trees and shrubs. Bounties have been tried in various states as a means of reducing the number of crows and other birds and animals which were considered to be harmful. These bounties have seldom been successful, and have cost the taxpayers large sums. In Illinois \$55,000 has been spent on a bounty on the English sparrow, and the law has been the cause of the destruction of great numbers of our beneficial native sparrows, which were killed by mistake. A few years ago Pennsylvania expended \$90,000 on a bounty on hawks and owls. One hundred thousand of these birds were killed, and consequently field mice and other injurious creatures increased to such an extent that in the year and a half in which the law was in force it was estimated that the farmers had sustained a loss of over \$4,500,000.

Another species which is looked at askance by most farmers is the large blackbird, usually called the crow blackbird. But these birds, like the crow, do more good than harm. When they are eating corn and grain they do so at a time of the year when they are in large flocks and are, therefore, most conspicuous, but when engaged in the useful occupation of feeding insects to their young birds they are very quiet and are not much noticed by the average observer.

But let us leave these birds of more doubtful reputation, and turn to those whose character for usefulness has been unquestioned, and which merit the care and protection of every one. The bluebird, which lives almost wholly on insect food, and does no harm to the garden, is a familiar bird to most of us, and is one of our sweetest singers. He can be induced to build his nest near your house if you will furnish him with a box placed out of reach of cats, making in the side, near the top, a hole about an inch and a half in diameter.

Another bird most friendly to man is the jolly, lively little house wren, whose song bubbles and tumbles all over itself in its haste to get out. He will appreciate a box for a home also, but make the hole only an inch wide. Ninety-eight per cent of the wren's food is insects. The barn swallow, a most useful bird, can also be persuaded to live near us if we will encourage him a little, sometimes a small hole cut in the gable of the barn is all the invitation he needs.

In the lilac bushes in your yard you may find nests of the yellow warbler, the catbird, and the brown thrasher, that long cinnamon-brown bird with the glorious voice, and in your maples and elms the robins, orioles, and vireos, the rose-breasted grosbeak, and the cedar birds may build, or perhaps the wood thrush, our finest stinger. All of these birds are invaluable, even though some of them may eat a few of our cherries. They all prefer wild fruit, if they can find it, and it is a good plan to plant some of our wild fruit trees near our chief orchards. The beautiful rose-breasted grosbeak is one of the few birds that will eat potato bugs in quantities. The oriole eats the grub of the click beetle, one of the most destructive worms known.

In the fields you will hear the sweet, loud whistle of the meadow lark. There are also the red-winged blackbird and the gay bobolink. The latter is a destructive bird in the rice fields of the south, where it is called the reed bird, but here it lives mostly on weed seeds and is beneficial.

The red-winged blackbird destroys weevils, one of our worst insects. The stomach of one meadow lark contained thirty-seven grasshopper. This bird is, unfortunately, sometimes shot as a game bird, but he is too valuable to be spared.

Out in the wood lot we find the chickadee, that friendly little gray and white fellow, with a black cap. In the stomach of four chickadees were found moths of the cankerworm containing 1,026 eggs, from which it has been estimated that during the twenty-five days in which these female moths crawl up trees each chickadee would destroy 138,750 eggs.

Woodpeckers are also helping to rid our trees of insect pests. They are all almost wholly beneficial, except the yellow-bellied sapsucker, which, though he does more good than harm, does injure a very few trees by girdling them with holes. The woodpeckers are the only birds that can reach the ants which attack the small decayed spots in timber, and which, if not destroyed by the woodpeckers, would extend their ravages so as ultimately to kill the tree. The birds rarely leave any mark on a healthy tree, for they prefer those which are partially decayed, where the wood-boring insects are at work. In the stomach of a single "flicker," the only woodpecker which feeds mostly on the ground, 3,000 ants were found.

Those quiet-colored members of the fly-catcher family, the phoebe, weed pewee, and king bird, live almost wholly upon insects that they catch in the air, and are most useful birds. The great family of American sparrows also, including the song, vesper, white-throated, fox, chipping, field, and tree sparrows, as well as a host of other small brown birds, and many more brightly colored ones, including some of our most beautiful singers, are great eaters of weed seeds, some of them living on these seeds exclusively in the winter. The tree sparrow stays with us only in the winter, and it has been estimated that in the state of Iowa these birds consume annually 875 tons of weed seeds.

The cuckoo, a long, slender, dove-colored bird, with a white breast, eats so many hairy caterpillars that the lining of its stomach is often found to be so thickly covered with hairs that it resembles fur. This bird will eat the tent caterpillar, a worm usually left untouched by birds owing to the weblike veil with which it protects its colonies.

I have given this brief account of the food of some of our common species a little more in detail, but there are many other most valuable kinds of birds which I have not even touched upon. When you realize that there are 1,125 species in the United States you will see that each one cannot be mentioned.

Even the seagulls and terns have their uses, for they are great scavengers and pick up waste matter along the shores.

I have in this paper dwelt only on the useful side of bird life, and have left out the many other points which might have been touched upon, as, for instance, their beauty and their music. Certainly our woods and fields would be far less attractive than they now are if we saw no swift-flying bird dart through them and heard no lovely song. What is known as the field study of birds has increased to a wonderful extent lately. Many who know nothing of the scientific part of ornithology are bird lovers and students, and they hunt them now with a camera or an opera glass, and not with a gun. Societies pledged to protect birds, named for the great ornithologist, Audubon, now exist in 22 states. Members of these Audubon societies do not wear the feathers of any wild birds, and many of them are studying birds and their ways so thoroughly that it would seem as if ignorance in regard to our feathered friends would soon be a thing of the past.

Most of the states now have excellent laws on bird protection. The Illinois law is very strict. It imposes a fine of \$5 on any person "killing, catching or having in possession any wild bird, living or dead, other than a game bird, English sparrow, crow, crow-blackbird or chicken hawk." If the legislators

had been familiar with the government reports on the crow and the crow-blackbird they might not have left these species unprotected, nor, perhaps, would they have said, further on in the law, that the owners of land might destroy fruit-eating birds, on their own property, if they knew the result of the investigations of these same fruit-eating birds. But the Illinois law on the whole is excellent. In Congress a bill called the Lacey bill has recently passed, which makes it illegal to transport into other states birds killed in violation of the state law. If these state and Federal laws are enforced it will mean a greater advance in bird protection than has ever been seen before, and in any event their passage shows that a better understanding of the value of birds to man has become general.

Let us not only strive to prevent the destruction of birds, but let us do all we can to encourage them to thrive and increase. Plant mulberry, bush cranberry, hawthorn, wild grape, juniper, cedar, bitter-sweet, mountain ash, viburnum, choke cherry, dogwood, around your yards and gardens. The birds love the fruits of these trees and shrubs. And let us spare every thicket and wild tangle of shrubbery and vines that grows along the edge of our roads and pastures. Birds need cover; they will not nest or live in bare, shaven fields; and these wild growths shelter the birds and are also things of beauty in themselves. Do not let the English sparrows nest on your premises, for they will soon occupy the whole place and prevent the nesting of other and more useful species. In short, let us, who live in the country, the home of the birds, do all in our power to preserve and encourage creatures who do so much for us. Let us protect them from destruction, even if we do so with no higher motive than for our own good.

THE FARMER'S HIGHWAY TO SUCCESS.

[By P. A. Lambird, Newton, Illinois.]

The business avocation which a man has is not simply his means of getting a living, but is his part of the world's work.

Each avocation from farmer to manufacturer constitutes a part of the world's machinery. Only when all the parts are perfect will the business world be prosperous.

When labor, thought and honesty are linked together in every branch of our industrial life, we shall have less friction in the machinery and more gold in our pockets.

There are many avenues that lead to the farmer's highway of success, and he should travel that one best suited to his inclination. To succeed he must first be thoughtful, persistent, ambitious and, above all things, honest. He must understand that the thought (gained by experience) coiled up in his head is the mainspring of his business. He will run in a rut as long as it pays; when it fails, out he goes. He is a man neither morbid, superstitious, nor jealous of other enterprises. He is a man who has reason and out of it gets reason. Sink or swim, he plants his feet on his judgment and stays there.

The American farmer is a better business man today than he was ten years ago, but he has many lessons yet to learn.

The average farmer must generally commence his business with a limited amount of means, hence he should not be superstitious about debt. Lecturers upon farm topics invariably season their remarks with sage injunctions about avoiding debt as a plague; and yet there is not one farmer in a hundred in the western states today who did not get his title to his first home through debt. They were men with a capital of ambition and energy, bought their farms, ran into debt for them, and fought their way out to independence and comfort. It was a long struggle for many of them, but their fight was not against debt; it was against poverty.

Do not understand me to teach or practice the credit system as being absolutely essential to the farmer's highway, as debts so greatly differ. To go in debt for productive property is one thing; to go into debt for unproductive property is quite another thing.

To buy land for less than it is worth, to buy stock to feed on the farm, to make needed improvements, to hire labor, to save that which is going to waste, to buy improved machinery that saves expense; these things are business debts, debts that are a source of profit.

But for the farmer to run in debt for fast horses, for stock that he does not understand, for enterprises over which he has no control, for costly buildings, and last, but not least, for costly vehicles, musical instruments, furniture and wearing apparel, that his family may move in that circle known to the business world as the "sheeted dead" (usually called social circles) which regard these things only—these are the eggs from which are hatched disappointment and dishonor; these are the debts that cornice the homes with financial despair, fresco the walls with broken hearts, and fill the columns of the press with the deeds of suicide.

When credit is used let it be in a straightforward business way; store debts and floating debts are a nuisance. The farmer who forces a merchant to carry him deserves a rough ride and generally gets it.

The farmer has no business to force the men with whom he deals to carry him.

Let him borrow where they make a business of loaning and clear up his scattering accounts and redeem his paper on time though the heavens fall.

A farmer can contract one debt which never can be paid—a debt which is incurred when his judgment goes into bankruptcy and he goes into farming in opposition to his own tastes. It is hard enough to win success in any calling when the whole bent of a man's mind is in the direction of his business. It is doubly hard when the mental drift is the wrong way.

A great man once said: "Be what nature intended you for and you will succeed. Be anything else and you will be ten thousand times worse than nothing."

The men who are safely mounted on the farmer's highway of success and are attracting the most attention from stock breeders and agriculturists are specialists. They have left no half-turned furrows, but have worked each in his own vein that unearthed a richness of knowledge for himself and the world. The drift is in the same way in the professions; go to the city and you will find lawyers labeled R. R. Lawyers, Divorce Lawyers, Criminal Lawyers, etc. The same with the doctors, each making a study of some one of the organic parts of man; and the general purpose man who can do everything goes down before the deadly competition of the professional man who can do one thing and do that right. What is true elsewhere is true on the farm. Concentration of purpose and talent is as important there as elsewhere.

It is urged in objection that remarkable talents are needed to run specialties on the farm; that the average farmer does not know enough to be successful in this way. Is not the objection a poison to itself? Does it require as great talents to do one thing as to do one dozen? Does it require more capacity to be a wheat grower, a fruit grower, a beef producer or a swine raiser than to represent all four interests in one? Can one of the parts be greater than the whole? If so, mathematics and common sense should be tied up and plowed under.

The farmer who grows a crop should estimate the cost as carefully as an architect who plans a building counts its cost; by so doing he will soon become a specialist. It is farmer-like to guess; it is business-like to know. Thinking and figures are deadly enemies on the farm. Crops should be grown, not as the result of jerky impulses, but of careful calculation. The farmer will then know exactly where his money comes from; at the close of the year, if he is financially sick, he can tell what part brought on the disease.

The man who keeps a cash account thinks twice before he spends his money, and if he be a successful farmer he will spend thoughtfully what he gets laboriously.

The obligations of citizenship should make every farmer active in politics, not for the good of his class alone, but for the good of his country. It is not good citizenship for the farmer to keep away from the polls for the lack of time to vote and then spend his time bewailing the result of the election.

Some men say they do not like to meddle in politics because the atmosphere of political life is full of moral poison. Why do they not stop business because of the tricks of the trade and the dishonesty of some business men? Why do they not forswear society because it does frequent honor to hollow hearts and hollow heads? Will the political atmosphere become purer by the absence of good men?

The men who are too dainty to help govern themselves ought to pay taxes in Spain and get justice in the Philippines.

The farmer who is a good citizen will never be oppressed with that nightmare of nonsense which pictures the tiller of the soil as carrying all the burdens of the world. A good citizen respects the rights and virtues of all classes and does not magnify those of his own.

The successful farmer will never call anything good enough which can be better; he will constantly be looking and working for better crops, better soil, better stock, better buildings and a stronger sense of justice. He should love his vocation; he should carry into it enthusiasm backed by faith; he should be broad in charity, strong in his friendly sympathies for other classes; he should be loyal to himself, loyal to his family, loyal to his county, and above all, loyal to the truth.

This nation of ours with its laws, its mills, its institutions, its factories, its mines, its forests, its millions of cultivated acres, its beautiful cities, its happy homes, its wealth of matter, and its wealth of mind is a living monument to the business ability of those men who, in an early day, came here to make for themselves homes in the western wilderness.

This nation of ours owes its greatness and grandeur to that class of business men who have made a success in life, or in other words, to those who succeeded in raising the standard of their avocation to a higher plane.

WHAT THE INSTITUTE HAS DONE FOR THE CORN CROP OF WILL COUNTY.

[By John D. Frazer, at Will county Farmers' Institute.]

This is a question to which it is very hard to give a definite answer.

I am of the belief that it has not done what it might have, had many farmers put themselves in a position to receive the benefits to be derived therefrom.

There are many farmers who cry "book farming" about our institute and say experience is the only way a man can know farming.

Now, experience is all right, I know; but some men have had too much of that for their own good and had they learned a little from others it might have been better for them.

Now an institute is a place where one can go to gain knowledge; and as this institute only runs three days in a year, we are supposed to go on and continue to educate ourselves as best we can, either by experiment or by observation.

And I believe this institute has been of vast importance to many. Not alone from what is derived from the papers given here, but from the many discussions that go on at these times.

If any one wants to know how to grow good corn let him spend a day in our exhibition room and keep his ears open and he will go away a very much wiser man.

Old methods have and must give away to newer and better ways. The way that our fathers grew corn when this virgin soil was first plowed and a crop would grow, it did not make any difference how it was cared for, won't go nowadays.

Our fertility must be maintained and corn is the best friend the land has. It is a tenant of the soil and not a robber.

We are taught by our institutes to take the best care that can be taken of all fertilizer made on the farm.

The fertility of the soil in a large measure determines the yield of crop and the largest crop must be grown to insure the greatest profit.

This will emphasize the fact that it is wise economy to constantly enrich and not to impoverish the soil.

We have had our attention called to the rotation of crops.

The drainage of land is another subject we have had at our institute, and these both lead to the better growing of our king crop—corn.

In the way of seed and varieties is where this institute has done its most for the corn growers of this county.

These friendly contests which we have entered into each year have been very beneficial to those who have entered as well as to those who have not.

When a farmer brings corn to one of these contests he is very apt to bring the best he has. He can then compare with his neighbor and if not too deep in the old ruts, can find a place to get seed, and thereby better his corn for the coming year. I sometimes think that some farmers are like the East Indians who have grown the same wheat for generations, so that in many places it yields only three or four bushels per acre.

The English government has tried to get them to raise newer and better varieties and they say this wheat was good enough for my father and for his father and it is good enough for me.

I saw a man in town last fall with a load of nubbins. I do not think there was an ear over six inches in length in the load. I remarked to him that he had ought to change his seed. He said it was the best corn there was. It was the solid kind. He would admit it would not yield as much as some other varieties and the money he got was no more solid. But his corn was the solid kind and that settled the corn question with him.

This is the kind of men that get no benefit from an institute. I do not think he even knows there is one. And probably would not go if he did.

This is not so with many Will county farmers who have got seed corn from all the leading seedsmen, from fairs and corn shows and have ransacked the four winds of heaven for the best corn. For you must know there is nothing too good for a genuine Will County Farmers' Institute farmer.

The institute has taught men to think. And we have been inspired to do better work, and to produce the best crops of corn we could possibly produce. This hunt for new varieties has been conducive of much good. These little experimental plats that we see on many farms where these new varieties are grown have taught us that what can be done on one acre can be done on forty or more.

So that many farmers, instead of growing an average crop, are now growing nearly two. I think on many farms in this county the Farmers' Institute has increased the corn crop 25 per cent; on some 40 per cent, and on some no increase at all. An average crop in Illinois this year is 34.7 bushels, and of the United States 25.6 bushels per acre. Now, we all know that such crops as these little more than pay the cost of growing.

Statistics and figures are always dry matter for most people. And I sometimes think a politician can prove anything by them. So by their use I am going to prove some of the benefits of this institute. I shall take two representative townships situated near the center of this county.

In the year 1890 the town of Jackson produced 98,820 bushels of corn and in the year 1899 it produced 256,620 bushels of corn. Eighteen hundred and ninety is about the time farmers commenced to take an interest in the institute.

Manhattan in 1890 raised 149,125 bushels of corn and in 1899 322,200 bushels.

Each of these townships increased their acreage by about 1,000 acres. Now, allowing the average to be forty bushels per acre the gain in bushels for Jackson would be 115,200, and for Manhattan 133,035; and a gain for the two towns of 248,235. At 35 cents per bushel this would amount to \$86,882.25 for the two towns mentioned.

Some will no doubt say I am too sanguine and they will say it was due to poor crops, or to a change of the president of the United States.

If a man is sick he calls in a doctor. If he gets well he does not say I might have got well without the doctor's help, but he gives the doctor the benefit of the doubt and says he cured me.

So I shall claim the benefit of the doubt for this institute. This increase in the corn crop means more cattle, hogs or corn to sell, and this all means more comforts for the farmers' family and more of the luxuries of life.

I remember a number of years ago of hearing a man read an article before this institute and he said too many farmers started in farming with a top buggy, piano and rocking chairs. I am glad to say that these are a few of the luxuries (if they may be called such) that this increase in the corn crop permits us to enjoy.

This increase in the corn crop is what will give us money to educate our children, keep the boy on the farm and make farming a pleasure and not a place of drudgery.

When we grow these large crops of corn there is a good feeling existing with us all. We then recognize there is no place like the farmer's home.

Who ever heard of any one from this county taking corn to the State fair before we had an institute? Now we have farmers who are not afraid to compete with any one with corn. And this year I believe two of the prizes from the State fair and one from the corn carnival held at Peoria came to Will county.

Nor must this institute stop here. The field is just as large now as it was when it first began. In reality it has only commenced its work.

Little attention has been given to a systematic study of corn as regards the adaptation of varieties to peculiar conditions of soil and locality. We have learned by experience that corn responds as readily to selection as do horses, cattle or swine. And farmers must take the same pains with corn as they do with stock, or must often get seed from some one who does. While we can not grow corn with a pedigree as we do with stock, we can grow that of good, pure blood, so that the ears will have at least a resemblance to each other.

I believe this cause is the reason why we do not have more corn exhibited at this institute. The prizes that are offered at this institute should bring out 500 exhibits of corn each year. And every farmer who attends this institute should bring an exhibit of his corn.

Experiments have proven that corn is subject to great variation. And by taking advantage of these variations almost any improvement desired may be obtained. Corn for milk feeding purposes should be grown with a large amount of protine. The glucose man wants corn high in oil.

At the Peoria corn carnival I met a student from the State University and he told me of their experiments with corn this year. He said if they could continue for three years more they would produce a corn that the glucose company would pay 16 cents per bushel more than they would for ordinary corn.

The barren stalk is another subject we must educate ourselves on.

Farmers, like others, must learn a fact is a fact, no matter who found it out, and that it pays to deal as largely as possible with them in accordance with established principles.

The better farmers of today are careful, thoughtful men, who make earnest inquiry concerning what they do not understand.

USE OF PUBLIC HIGHWAYS BY CORPORATIONS.

[Read before the Will County Farmers' Institute, January 12, 1901, by Hon. Asa F. Mather.]

The most common, simple and best established definition of the term "highway" is, "A passage, road or street which every citizen has a right to use." This right to use means an equal right and excludes use in such manner or by such means as abridges the free use by another.

The highway, common road or common right of passage is as old as civilization. Indeed, this right of passage must precede any considerable advance in civilization, for, in the social and material advance of man, it is as essential as are the veins and arteries of the body. It is impossible to conceive the existence of man without the right and means of communication and association with his fellows; therefore, no argument is needed to establish the free and common highway as of first importance to the individual, to communities and to the State. Note that, in the savage community, the first instinct is to bar or prohibit the passage of the stranger. Also, note that, if it were possible to secure the freedom and safety of a highway or right of passage in any country, among any people, however barbarous or uncivilized, knowledge and civilization would stream along that highway with the certainty of the passage of light. Hence, I say, the highway, its preservation in the simplest and most absolute freedom of passage, is of the highest interest and importance to individual, community and State.

Our system of highways and the customs, rules and laws governing their use are not the growth of a day, but are the crystalization and expression in practical rules and laws of the experience of centuries. These rules, or laws, being the outgrowth of the needs—perhaps the necessities—of communities or states, vary, and are established to meet and provide for the varying conditions of the public to be served.

With us, the highway is created or established by one of three common methods, namely: By legislative authority, by dedication or by necessity. Speaking in a general way, our roads, as is the rule in all the western states, are established by legislative authority, and the laws vary but little in the different states.

A highway by dedication is the voluntary act of the owner and is only of passing interest to our subject, for such a road, when established, is a part of the common highway, governed by the general laws.

A highway by necessity, as the term imports, is only a privilege, rather than a right, to relieve from the unexpected calamity of accident, and as I understand, has no well-defined status under our laws—is more, perhaps, a well established custom than a fixed law and is of no moment in the present discussion.

In our own State, we have a defined body of law on this subject, well sustained, and exemplified by court decisions and long established customs with which our farmers and land owners should be familiar, for upon them falls the burden of maintenance as well as the duty and interest of safeguarding them from undue encroachment.

A highway established by legislative authority or dedication, when established, inures to the public use and benefit, and subject to same rules and regulations, equally without reference to means by which it is established. Not so, with a highway from necessity; in the nature of things, that must end with the necessity.

In the brief time we can give to the subject, it is not expected that discussion in detail of the several branches of the topic will be undertaken; sufficient that we have well established, an excellent system of highways. Accepting this, we may consider the public right and the private right.

To the public belong the right of passage—no more. As incident to the right of passage, is the right to improve or repair to render the road passable, even to the utmost condition of utility, for ordinary passage common to everyone. I speak of the right to repair. Perhaps it is more accurate to say

that this right of passage is burdened with the duty to repair, for, under our system there is no obligation on the part of the individual to keep his highway in repair, that burden being imposed on the township or county.

As I understand the right of passage, it does not include the automobile, electric or steam traction, but such common passage as does not abridge that right in another. Briefly stated, that is all the right the public has in our common country highways. Every other right—in fact, every right incident to ownership—subject to the easement or servitude of the highway remains to the individual; he may use it in any way not incompatible with the public enjoyment; may grow grass, trees, fruit or timber thereon; has a right to the minerals, if any, and may remove any product at his pleasure. And also retains the privilege of paying taxes thereon at the same rate as his most productive field.

In defence of his ownership, he has the same rights and remedies against trespass or unlawful possession as he has to any portion of his holding. Already the process of undermining these rights by apparently harmless legislation has begun. A law which, if administered by its strict letter may be useful, certainly not harmful, is the means, as I understand its practice, of imposing upon the individual land owner—I refer to the law under which our county boards (board of supervisors) authorize or permit the erection of telegraph lines; it is but a license to the corporation to proceed to acquire the right of way and erect its line. Ownership includes from the surface height and depth indefinitely, or as the old English law declared, as high as Heaven and deep as—the other place.

This rule is a substantial part of our law and emphasizes the stupendous gall with which the corporation, in utter disregard of private right and lawful procedure, thrusts the arm and wires of its line among the trees and over the field.

It is this wanton destruction of trees, which irritates me. Among the insensate and sensate things which bind me to the farm, of two I would name the tree and the horse. We cannot have the tree in our cultivated fields. The tree and the horse both are best on the road; the one may be crowded off by the telegraph and telephone, the other by electric and steam traction.

It appearing that ownership is complete and absolute, in the individual, subject only to the easement of the highway, the question readily occurs, What reason is there—is there any reason—why a corporation should acquire a money earning right or benefit in, upon or across individual holdings with no other effort or expenditure than taking in the utmost spirit of lawlessness? It seems that telegraph and telephone lines, electric ways and possibly electric and steam traction on the highways are necessary (I doubt the latter) but it seems the statutes are ample and liberal by which all lines of public utility can acquire a right of way working no substantial injury to persons or vested rights, but how to get something for nothing is the problem of the age and is well solved in the new use of our highways. Why do these lines seek the highway? Some may say the telephone, to be useful, must reach the dwellings; granted, but the great through lines of both telegraph and telephone seek the whghways.

Comfort, convenience and profit demand that the highway be retained in its essential feature, both in construction and use. This is impossible if given over to the common and unrestricted use of steam and electricity. The learned jurist may decide that the horse must become used to this novel innovation, but no amount of logical reasoning will change the nature of the horse. It is not that the horse must give way to a cheaper and preferred means of propulsion—it is that his satisfactory and safe use in a highway, common to various forms of mechanical propulsion, is impossible. Probably a limited use or use under restrictions of steam or electric traction on the highway is necessary, but it should be by license and under restrictions. The many miles of our narrow country hard roads built at the expense of the farms should be retained for farm use. It seems to me that interest should be on the alert to see that the existing order of things is not changed by legislation cunningly framed to look innocent and harmless, and that proper

laws regulating the use of the roads under the new order of things are enacted and enforced when needed. We should pay more attention to the enactment of laws and to the enforcement of law.

The situation seems to be this: The average farmer is good natured, sincere and truthful and disposed to accommodate; he suffers these predatory trespasses rather than make trouble or appear close or selfish. If the occupation of parts of the highway for an unusual, private or corporate interest were temporary only, it might be well for the farmer to treat it in a liberal and tolerant spirit, but lapse of time, long use, sometimes establishes a right; long acquiescence makes custom; custom, in time, makes law.

I am not advocating a narrow policy, opposing progress and improvement, nor would I advocate war upon or undue opposition to corporations. Where the private interest clashes with the corporate interest, treat it fairly, but the corporation should be amenable to the same law, as carefully and strictly enforced as against you or me where our property or personal rights are involved. I do say that it is time the fact be recognized that our highways ought not to be diverted from the purpose of their creation nor be burdened except under the sanction of law recognizing the individual right. We all want the railroad, telegraph and telephone, but often it suits us best on some other man's land.

If A and B are both benefited by an enterprise, but under the guise of public benefit, A gets the entire burden, is it just? No. Is there a remedy? Yes. Let the beneficiary of the profits honestly pay for the burden imposed on A. Why is it that men, as directors of corporate interests, will plan and put in operation in the corporate name, means and methods which they, in their private capacity, would scorn as dishonorable? Is the mad rush to be ahead in the new and vast enterprises with no standard of rating except the percent profit fostering the spirit which moved the old Quaker who said to his son, about to go out into the world, "John, get the money; get it honestly if thee can, but John, get the money."

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